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MEASURING CULTURAL RESOURCE MANAGEMENT ACCOMPLISHMENTS

PREPARED FOR

PROFESSIONAL DEVELOPMENT PROGRAM FOR OUTDOOR
RECREATION MANAGEMENT

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A System for Measuring Cultural Resource Management Accomplishments.

ABSTRACT

Cultural Resource Management programs were initiated in the Forest Service as early as 1967 but did not become popular until 1974 and later. Since the passage of the 1974 Amendments to the Reservoir Salvage of 1960 (U.S.C. 98 Stat. 174), all nine regions of the USDA Forest Service have acquired specialists and undertaken programs to manage the cultural properties of the National Forest System. Although only a short period of time has transpired since the inception of these programs, the total expenditure for cultural resource management nationally has reached nearly 10 million dollars.

Due to the rapid expansion in staff and funds being allocated to the program annually, concern has being expressed by many managers about the effectiveness and efficiency of the program. Fears have been expressed that important projects were unnecessarily delayed by frivolous cultural resource concerns.

A common problem in evaluating this new program is the absence of accurate and comparable information on what the public is getting for the tax dollars being spent on federal cultural resource management. The absence of data

on what the cultural resource management program is accomplishing makes it impossible for the federal land manager to reach proper decisions as to efficiency and effectiveness of actions taken.

This paper describes a system for measuring the accomplishments of the CRM program in order compare costs and benefits of various strategies for carrying out survey and evaluation of cultural properties. The system also provides budgeting and planning data information useful in meeting future goals and targets.

Preliminary analysis of the data collected from the nine regions of the National Forest System is also presented showing the scale of a wide range of cultural resource activities being performed. The data collected provide the baseline for comparison of information from future years in order to project trends and impacts of the Cultural Resource Management Program.

Recommendations are made that could result in the savings of considerable amounts of time and money by permitting the development of more effective or efficient ways to meet cultural resource goals and regulations.

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CHAPTER 1

INTRODUCTION

Through the decade of the 1970's, the Cultural Resource Management Program of the U.S. Department of Agriculture, Forest Service experienced a rapid period of expansion. Beginning with the first hiring of specialists in 1970, the staff of the program had increased to nearly 150 individuals by 1980. Most of this expansion occurred following the passage of the 1974 Amendments to the Reservoir Salvage Act (U.S.C. 98 Stat. 174) by the United States Congress. The statutory provisions of this and other Acts aimed at the protection of cultural resources stimulated the establishment of a rigorous procedure for identification, evaluation, and protection. The provision for external review of actions taken by the agency to meet these regulations caused the establishment of record-keeping steps to provide the documentation necessary for the review of such actions. As the program matured, standards and guidelines for the keeping of records about cultural resource actions also evolved.

Because the majority of the cultural resource specialists hired were archeologists by training, the careful recording of information about historic and prehistoric properties was

considered essential. Information of administrative use, however, was not the central focus of the archeologist's data collection. As a result, the possibility for determining the nature, scope, and impact of the CRM program from an administrative standpoint varied from Region to Region and Forest to Forest. As the program grew in size, questions began to be asked about the management of the program. A national review of the CRM program in 1975 determined that practically no hard information existed at the Regional level that could be used to determine whether or not the program was operating effectively or efficiently. Only one Region out of nine had developed a systematic procedure for recording and assembling administrative types of information about cultural resource activities.

A number of the cultural resource laws passed by the Congress during the mid to late 1970's contained provisions for reporting the results of actions taken under these laws. Requests began to be made of the Forest Service to report to the Congress details of the agency's CRM program on an annual basis. For the first several years these requests were not fulfilled due to the lack of information or due to the high cost associated with its collection. No central or systematic means of obtaining these data had been developed.

In addition to the need to provide data in fulfillment of statutory requirements, data are essential to the proper management of any program. Information is needed for planning,

budgeting, and decision-making. Information permits one to predict trends, determine unit costs, and evaluate results. In order to prepare budgets that are efficient and responsive to needs, one must have accurate and reliable unit costs. One must also know the relationships between CRM tasks and other functions being supported. Knowing these relationships will permit the assessment of the affect of various budget and program alternatives on CRM activities and the effect of different CRM program alternatives on other functions.

Useful budgeting and planning on a National level cannot be done without the ability to accurately assess the effect of changing techniques, methods, and standards on the output and costs of the program. The distribution of funds among the Regions requires knowledge of the variation in Regional resources and the different levels of complexity of work to be accomplished by different management units.

Given the value of appropriate information about cultural resource activities in program management, it would appear that the decision to be made is more one of which data to collect than one of whether or not to collect data. An additional concern is how to do it with the least impact on those who will be required to provide the data.

The purpose of this paper is given in the following objectives:

a. To briefly review the history of CRM data collection efforts in the Forest Service leading up to this project. To identify those data variables that were determined by other studies to be potentially valuable for program management.

b. To evaluate the wide range of possible data that could be collected and determine those data most useful for budgeting and planning purposes. Budgeting requires measures of cost, production, and regional variability. To determine what are the unit costs for major CRM tasks such as survey, evaluation, data recovery, protection, enhancement and planning.

c. Develop the means for collecting these data and elicit them from each Region in the National Forest System.

d. Evaluate these data with respect to the purpose intended and recommend any needed changes in future reporting efforts.

CHAPTER 2

HISTORICAL OVERVIEW

Although collecting and recording data is basic to the practice of archeology and history, these data are not always useful for administrative or management purposes. Files of archeological and historical site reports were begun as soon as the first specialists were hired. These files were not always useful in meeting the regulatory demands of the emerging federal CRM program. Regulations required determinations of significance, assessment of potential impact from development activities on cultural properties, and written evidence that regulations were met. Detailed information about specific sites was useful in determining significance, but the determination of potential impact required data on proposed activities, time schedules, and possible alternative actions. CRM activities began to have a serious affect upon other National Forest System actions. Questions began to be asked about the number of projects requiring cultural resource surveys, the level of intensity of required surveys, the costs per acre, the number of person-days needed to meet other resource output targets, and the length of time required to instigate a project. The answer to these questions required the collection and analysis of different kinds of data than most archeologists were used to collecting.

Archaeologists are trained to record carefully their observations about specific sites, their context, the relationships between the artifacts, features and environmental factors involved, and the precise location of pertinent information. They record details about the numbers and frequencies of sites, features and artifacts. Details are recorded about types of materials and their uses. Few archeologists, however, are concerned with how much time it took to survey an acre of land, or how long it takes to record a site. Nor are they particularly concerned with estimating the length of time required to survey, evaluate, and propose alternative actions for a given development plan, in order to protect cultural values. These data are of vital concern to program managers.

Although the 1966 Historic Preservation Act established the President's Advisory Council on Historic Preservation and set the framework for the review and comment by outside agencies, the procedures for providing documentation under this process were not developed until early in 1974. These procedures were issued in the Code of Federal Regulations, Number 36, Part 800. These procedures called for certain information to be supplied to the individual State Historic Preservation Officer and the Advisory Council in the advance of proposed projects when consultation was sought. This created the need for a systematic method for recording information about each project for which compliance with these regulations was required.

The passage of the Moss-Bennett Bill in 1974 (PL 93-291) added new language to the Reservoir Salvage Act of 1960. One of the new requirements of this statute calls for an annual report to Congress summarizing data about projects carried out under the Act. This created the need for a data set somewhat similar to the data set needed to meet the requirements of the process in 36 CFR 800.

> "The Secretary [of the Interior] shall coordinate all Federal survey and recovery activities authorized under this Act and shall submit an annual report at the end of each fiscal year to the Interior and Insular Affairs Committees of the United States Congress indicating the scope and effectiveness of the program, the specific projects surveyed and the results produced, and the costs incurred by the Federal Government as a result thereof." (emphasis added) (P.L. 93-291 Section 5(c)).

This annual report requires administrative details about CRM activities that are in addition to the scientific information normally recorded by archeologists and historians. Different information is required in order to be able to address the effectiveness, scope, and costs of cultural resource projects carried out by the Forest Service.

A review of the CRM program by the Intermountain Region in 1974-1975 resulted in the implementation of the first systematic and computerized data base of the kinds of information about cultural resource activities that would be useful for the administration of the program. This data base, called the CRM Project Data Base, contained information on each project that involved cultural resource survey, evaluation, mitigation, or protection.

It included administrative information on the number of hours of work performed, the amount of time required to prepare written documentation of the work, the number of acres examined, the methods employed, the number of properties identified or evaluated, the resource function being supported, and the person(s) doing the work. These data were contained on a cover sheet to the report that was required, by Regional directive, to be supplied to the Forest Supervisor and to the Regional Archeologist.

The data from this cover sheet are transferred to a computerized data base on the Fort Collins Computer Center computer using System 2000, a data base management program. By this means, the Region is able to retrieve and analyze CRM information whenever necessary as a means of providing a basis for planning and budgeting decisions. All cultural resource projects carried out in the Region had been summarized and transferred to this data base by 1975 and included data going back as early as 1968. Now project summaries are entered into the system as they are received by the Regional Office, keeping the information current. The data base is accessible by computer terminal from any location in the Region. Each Forest Supervisor's Office can evaluate these data and prepare analyses that can serve as the basis for management decisions.

The same pressures from a rapidly expanding program that led Region 4 to review its CRM activities, stimulated the Washington

Office to create a task force to look at the program Nation-wide. This task force visited several Regions during 1975 and made their final report to the Chief in 1976. As reported in the findings of the review, one of the major factors leading to the decision to conduct the review was the problem of cultural resource costs.

> ". . . The general consensus of field units indicates the cultural resource program has not been cost-effective. . . . Much of the reason for this team's existence is because of this problem." (CRPR 1976:10).

After closely examining the program in each Region, the team could still not clearly resolve that question. Its failure to define the relative efficiency or inefficiency of the CRM program was due to the paucity of data bearing on the question. As stated in their report:

> "Accurate per acre cost data [are] not available for comparison between Forests or Regions. Cost-effective analysis is difficult because of the many variables involving intensity of inventory, lack of standards, inability to define output, and varying acceptance by State SHPO's of these results. It was obvious to the team that much non-productive effort is being expended because of an inability to define the desired end product. Development of National standards and clear policy direction is needed for cost effectiveness." (CRPR 1976:10).

In addition to the concern over the absence of information needed for examining cost-effectiveness, the task force also highlighted the need to gather accurate data for management. Again quoting from the report:

> "Effective planning and budgeting will require accurate data gathering. Meeting the intent of the legislation and Executive Order will require a system for documentation, information storage, and retrieval capabilities to avoid future survey duplication and possible litigation. An effective report system is needed to provide cost estimates, goal accomplishments, and 'state-of-the-art' information to the managers and those needing the information for budgetary purposes." (CRPR 1976:17)

The publication of this report and the included action items, resulted in a number of widely felt developments. A revision of the FSM 2360 section on Cultural Resource Management was prepared with improved standards and guidelines on data management and collection. A task force on data management in cultural resources was formed which produced recommendations that were integrated into the revised Forest Service Manual. The new direction stated:

> "Records necessary for cultural resource management will be maintained in conjunction with the inventory process described in FSM 2361.22. Records of properties and areas inventoried should be kept as the inventory develops.
>
> Class I Properties. Will be entered in the RIM system under the documentary site category, as described in the RIM Handbook, FSH 2309.11.
>
> Class II and III Properties. Will be recorded using regionally defined systems to store data needed for land management planning, project planning, and cultural resource evaluation processes.
>
> Area Inventories. Information will be recorded using regionally defined systems to store data." (FSM 2361.7-2361.73)

The direction calls for a number of different types of data bases to be developed by the Regions to correct the deficiencies noted

in the Program Review. Although the need for a National data base was identified and discussed, the implementation was postponed to some future date since there was no cultural resource specialist in the Washington Office to assume responsibility for it.

Since the completion of the CRM Program Review and the implementation of its action items, several Regions have developed or are developing CRM data bases. Carrying forward with the concept for a National CRM data base, the Washington Office held meetings on two different occasions to discuss possible parameters for such a data base. The first meeting occurred in Salt Lake City, Utah, in 1978. The second meeting took place in Washington, D.C. in 1979. The newly appointed WO Archeologist was the main stimulus for these meetings. As a result of the discussions, a decision was reached to postpone any National data base development until clearer definition of data requirements could occur. Once these requirements were identified, they would be compared to existing Regional data bases to see what data were or were not available. Any additional data requirements would then be added to the Regional systems. This would reduce the impact upon the Regions in future requests for National information.

One of the major achievements of these meetings was the development of new cultural resource activity codes for the Management Information Handbook. This handbook, which was being

revised at the time, includes coded data elements for recording all resource activities for the National Forest System. The elements defined in the handbook are utilized as the building blocks for all NFS planning and budgeting. It is critical to any program to have classes of activities adequately defined in the handbook. Otherwise there can be no correlation of accomplishments, goals, and funding levels. In considering what data elements should be measured and reported for the cultural resource program, the existing or current MIH elements must be given careful attention.

Each element of data in the Handbook consists of an identification code, a definition of the information to be measured, and the unit of measurement. Data elements are organized into subject areas by activity type. Subdivisions of data are defined that can be aggregated into larger elements or used separately depending upon the intended output. Cultural Resource Management elements are included in the Recreation Management category of activities and fall into four major headings. Subcategories under these headings also exist for various cultural resource tasks.

Code		Element	Unit of Measure	
A01		RECREATION PLANNING		PLANS
	306	Cultural Resource Planning	Plans	
A02		INVENTORY		ACRES
	308	Cultural Resource Inventory	Acres	
	309	Cultural Resource Overviews	Acres	

A03		CULTURAL RESOURCE EVALUATION AND ASSESSMENT	PROPERTIES
	315	Cultural Resource Evaluation	Properties
	316	Cultural Resource Assessment	Properties
	317	Cultural Resource Nomination	Properties
A04		CULTURAL RESOURCE PROTECTION AND ENHANCEMENT	PROPERTIES
	327	Cultural Resource Enhancement	Properties
	328	Cultural Resource Protection	Properties
	329	Cultural Resource Mitigation	Properties

The significance placed upon the MIH coded data by Forest Service management makes the consideration of these elements central to any analysis of a cultural resource reporting system. Whatever set of data elements are recommended and adopted, they must permit segregation or aggregation into the elements identified in the MIH list in order to provide the greatest use of the information. The anticipation of a national reporting system by those who developed the MIH elements contributed to their relevancy to the effort reported in this paper.

With the establishment of the National Register of Historic Places by the National Historic Preservation Act of 1966, another set of data requirements were established. The data included in the property nomination form of the National Register forms another set of data to be considered in this analysis. The National Register consists of a list of properties deemed worthy of national recognition due to their particular importance. In order to consider a property for listing in this Register, a number of specific attributes must be evaluated. As a result, the National Register data base consists of property-specific elements relating to its definition and significance. The focus

of the data is on individual properties. The nomination of specific properties which appear to meet the criteria for listing is a legislated responsibility of each federal agency and, therefore, represents one of the tasks assigned to cultural resource specialists. The MIH codes include a category for reporting the number of nominations processed each year.

Although keeping a record of each property nominated and listed is considered important, specific information about each property is not seen as significant in measuring the amount of work performed by a unit. Limiting the data reported on National Register sites to the number listed each year appears to be adequate.

Another externally required data set is the Preliminary Case Report required by the Advisory Council on Historic Preservation. This document describes a specific project in which some effect, usually adverse, is likely to occur to a property either listed in the National Register or eligible for listing. The data are project oriented rather than property specific, hence, are quite dissimilar from the National Register data base. From a National perspective, however, details of each potentially adversely impacting project is less important that the number and frequency with which they occur. Adverse effect projects and the preliminary case reports required for each of them is a task of sufficient importance that some accounting of the number and frequency ought to be made.

In December of 1980, the 1966 Historic Preservation Act was amended to include reporting requirements in addition to those that had previously existed. These requirements are outlined in Section 110 (b) of the Amendments as follows:

> "Each Federal agency shall initiate measures to assure that where, as the result of Federal action or assistance carried out by such agency, an historic property is to be substantially altered or demolished, timely steps are taken to make or have made appropriate records, and that such records then be deposited, in accordance with section 101(a), in the Library of Congress or with such other appropriate agency as may be designated by the Secretary, for future use and reference."

Although this regulation specifically addresses the recording of historic or prehistoric properties that are being altered or destroyed, it adds an additional condition for Forest Service CRM record keeping. It also makes it clear that in certain circumstances proper recording is an acceptable substitute to preservation. It also suggests that there was a general failure on the part of federal agencies to make and keep proper records of historic properties being adversely affected by federal actions. Some accounting of the number and cost of documenting such properties is necessary to measure this task.

A Congressionally requested investigation of federal CRM programs was produced in February of 1980 that pointed out a number of weaknesses, including the lack of adequate data management practices. Their recommendation to the Secretary of Agriculture stated in part:

> "The Secretary of Agriculture should require the Forest Service to improve its program for identifying archeological resources by making sufficiently comprehensive surveys to preclude the need to resurvey the same lands for future projects, . . ." (GAO Report 1981:33)

Although this recommendation does not specifically state that the lack of proper data management is the problem, it does identify the problem of having to resurvey areas. This could be avoided if better records of survey projects were kept that showed precisely what areas were examined and what areas were not examined. Even if more comprehensive surveys were made, the failure to properly record and save that information could still result in a need to resurvey areas in the future.

The combination of external requirements and the GAO study culminated in a revival of interest in a National CRM data base to provide this information as well as that needed in planning, budgeting, and program management at the Washington Office. One of the major agenda items at the 1981 CRM Workshop sponsored by the Washington Office was the discussion of potential data elements for such a data base. At this meeting, held in San Diego, California, a list of potential data elements was evaluated by archeologists from all Regions. Data needed to meet statutory requirements under NHPA and ARPA were included along with items frequently requested by Congressional staff during budget hearings. Each element was compared to existing data bases found in several Regions (specifically Regions 3, 4, 8, and 9). From this workshop a potential list of data elements for a

National CRM data base was developed.

In anticipation of the implementation of a reporting systems using these data, direction was included in the 1982 Fiscal Year Budget Advice to the Regions to report on that year's activities by June 1 1983. At the same time the Forest Service response to the GAO Report stressed the committment to resolve the resurvey question by strengthening the data base management system.

In April of 1982, a second review of a draft National Data Base system was carried out by archeologists from all Regions and several Forests. This meeting, held in Minneapolis, Minnesota, produced a refined list of elements and definitions intended to produce comparability between Regional data in the FY 1982 Report. Because the fiscal year was underway, there was some urgency in finalizing the list so that Regions could begin accumulating these data. Because of this urgency, a review of the final draft of this list was requested in September of 1982. In December the reporting form was designed and sent to GPO for printing. The reporting requirements were included in the Forest Service Manual in February of 1983. Forms for the report, titled the Cultural Resources Management Accomplishment Report (FS - 2300-M), were mailed to the Regions by GPO in March of 1983.

CHAPTER 3

PROCEDURES

Measuring the level of activity in the cultural resource management program and computing its relative efficiency and effectiveness should begin with the minimal administrative unit concerned with such things. From a National perspective, however, one is most concerned with those administrative units immediately below the National level. For the purpose of this study, the minimal management unit to be measured is the Region. Although the data collected will most frequently originate with the individual Forest and occasionally the Ranger District, each Region will be responsible for compiling these data into a Regional summary for reporting to the Washington Office.

The nine Forest Service Regions encompass about 192 million acres of National Forest System lands, the majority of which occur west of the Mississippi River. Each Region is made up of a number of Forests which are in turn divided into several Ranger Districts. The information in which we are interested for this study is usually generated at the District level. The amount, intensity, and type of cultural resource action taken is dependent upon the type of activity being proposed and the degree of potential disturbance to important historic and prehistoric resources. Each Region encompasses a geographic area that possesses a unique

sequence of prehistorical and historical events. The material remains of centuries of human activities on these lands presents a widely divergent series of patterns of cultural properties. As a result no two Regions contain the same numbers, types, or distributions of cultural properties. Measuring the activities performed and the results obtained, must reflect these cultural and historical differences in order to arrive at comparable figures.

Report Form:

Designing an instrument to collect and measure the various cultural resource activities was a long process that began with the first attempt in the Intermountain Region to put together a data base of cultural resource projects. In response to questions about the impact of the cultural resource program on other resource activities, an evaluation of all projects carried out from 1968 to 1975 was conducted. Information from each project report was extracted and put into a computerized data base. Two major categories of information were needed to respond to the questions being asked:

1. Administrative information about the type of project, the impact expected, the costs and time involved, and the results of the work.

2. Locational information about the project and technical information about the cultural resources found and their environmental setting.

These data categories were included on a single page form that is attached to each project report prepared in compliance with the provisions of the 1966 National Historic Preservation Act. Data are then extracted from these forms as they are submitted to the Regional Office and placed in a computerized data base for easy access and analysis. Versions of this "Project Data Report Form" were adopted by the Southwest and Southern Regions for similar use. The Eastern Region has examined the form for possible use as well.

Based upon the experience gained in developing the Intermountain Region's data base, developing a device for collecting data from the Regions is a much simpler task than is the process of deciding which data elements to report. A number of basic guidelines have been developed through this experience and were assumed at the outset of this project to make the design process easier.

1. Where appropriate, data elements would coincide with data elements already being collected in Regional data bases through the Project Data Base File, or similar data base systems.

2. Data collected about cultural resources activities should reflect, where possible, the tasks defined in the Management Information Handbook.

3. Field collection of data should be simplified by requesting data categories at the level of greatest detail deemed necessary to the purposes at hand. Aggregation of categories can then be done where needed to obtain figures for other purposes. Computerized analysis of data collected would include provisions for automatic aggregation of data elements where required.

In defining the types of tasks performed by cultural resource specialists, the Management Information Handbook categories were the most influential. Data elements must either reflect these categories or be aggregatable into these categories in order to be able to integrate the cultural resource data into management analyses done using other MIH data.

The cultural resource management program has developed largely in response to the legal requirements of the 1966 National Historic Preservation Act. Data collected must be responsive to the kinds of activities required by this law in order to measure the impact of cultural resource considerations on National Forest management. The NHPA establishes five major categories of tasks performed in response to legal requirements. These are:

1. Inventory
2. Evaluation
3. Nomination
4. Protection
5. Enhancement

Measures of tasks performed in each of these classes of actions would be useful in evaluating the amount of response to each required activity. The most common task is the survey of National Forest System lands to locate and identify cultural resources. As the dominant activity of the program, it is clear that the number of surveys conducted annually is of interest. Since surveys are not all the same size, it is also useful to measure the area examined in each project. A great many small surveys can then be properly compared to a few very large surveys

in terms of project costs and results. Because the kind of survey conducted can vary from intensive, acre-by-acre examinations, to an extensive sample or reconnaissance of a large area, it is also necessary to reflect the intensity of examination through some other measure. Measuring the number of acres encompassed by the proposed development project, although a useful bit of information, does not permit comparison between projects where all acres were examined and projects where only a percentage of the acres were surveyed. By defining two elements of survey, the acres completely surveyed and the acres included in the project, allowances can be made for the variation in levels of survey intensity. Since most surveys are related to some proposed project, this latter measure is useful in illustrating the size of the area receiving technical clearance for development.

In addition to the number of surveys conducted and the area covered, some idea of the frequency with which cultural properties were found would be useful. An element to record the number of survey projects in which cultural resources were located would provide such a measure. An accounting of the number of new cultural properties found during survey activities would be another item of importance in measuring overall impacts from the cultural resource program as well as the relative density of the resource.

A final survey element to be defined is cost. Because of the way Forest Service budgeting is done, this is a most difficult figure to discover in any direct manner. Since it is not the purpose of this project to provide a strict fiscal accounting of the CRM program, reasonable cost estimates are acceptable. Some Regions currently keep track of the amount of time spent in doing each of the survey projects. By multiplying the hours spent by the cost per hour of the staff involved, an acceptable estimate can be derived. Other methods of obtaining more exact costs could possibly be developed within the current budgetary process with some work.

Six data elements are proposed for measuring the inventory activities of the cultural resource program. Specific definitions of each element must be provided if comparable results are to be obtained. Following are the descriptions of each element:

> Surveys -- are logical work units reflected in the number of reports and Environmental Analyses prepared as part of the cultural resource activity or in support of other resource activities. Although closely related to the "undertaking" of the compliance process of the National Historic Preservation Act, surveys may also be conducted for other reasons. All types of survey projects are to be counted. Sample surveys, referring to surveys that are less than complete in coverage, are to be counted along with complete surveys and reconnaissances.
>
> Acres of Complete Survey -- is defined as the acreage actually examined during the course of a survey. All locatable cultural properties have been found and no further survey of these acres is necessary unless there is a major change in environmental conditions such as erosion, vegetation changes, etc., that would make it possible to locate newly exposed sites. Any acceptable survey method that is designed to locate all existing cultural properties would produce "acres of complete

survey" units.

Acres Cleared -- is defined as the acreage included within a project's boundaries for which compliance actions have been concluded. For a specific project, the acres cleared will usually either equal or exceed the acres of complete survey for that project. In the event that an area larger than the proposed project is completely surveyed, the acres cleared would reflect the area surveyed and not the project acreage. This is possible since no further survey is required on that excess acreage should a future project involve those acres.

Surveys with Cultural Resources -- is the number of survey projects in which cultural properties were located. These are surveys which located properties not previously recorded in Forest Service files. Survey projects which include cultural properties whose general location and description were obtained from overviews or other documents but which have not been verified on the ground are also counted.

New Cultural Resources Located -- is the number of sites or properties located or verified during the course of survey work carried out during the year. This number includes only sites discovered during the current reporting year and not previously reported. This will be the number by which the management unit's total number of cultural resources is incremented each year.

Survey Costs -- is the total cost expended for survey projects carried out during the reporting year. Costs should include salaries, transportation, per diem, and administrative support costs such as report preparation, artifact analysis, record processing for site and artifact data, etc. In the event a unit records these activities by time spent, they should use a multiplying factor to convert time to a dollar cost. The purpose of these data is not to account for every dollar spent but rather to provide a good estimate of the cost of this activity that can be used in program planning.

The second most common set of cultural resource activities is the evaluation of cultural properties, and project proposals. The compliance process requires a series of determinations to be made about the significance of the cultural resource involved, the potential impact of the proposed project on the resource, and

ways that potentially adverse impacts can be avoided. In those cases where the impact of a project threatens to disturb or damage an important property, additional work is required to obtain the necessary reviews and comments from the State Historic Preservation Officer and the Advisory Council on Historic Preservation. Because each of these tasks involves a definable amount of work and has a direct impact on the timing of other resource projects, it is important to be able to identify the kinds of evaluations performed and the results obtained.

Projects which will not affect cultural resources may be carried out immediately with no further cultural resource action. Projects that must be modified in some way to prevent adverse impacts on important properties take longer to accomplish. Projects that cannot be modified sufficiently to avoid the loss of or damage to cultural resources must be delayed until actions are taken to recover information from the threatened properties that will mitigate the loss. Keeping track of the number of projects that reach each of these levels is important in assessing the relative impact of the program on other natural resource activities.

Ten data items are defined for the evaluation category of tasks. They include measures of the number of tasks done, the number of sites affected, and costs associated. These elements are:

Evaluations -- include the number of projects, activities, and reports on areas and properties carried

out in support of Environmental Assessments or for other reasons. Evaluations that are not in support of other resource activities are also counted. Include studies, separate from surveys, required to assess the significance of or impacts to cultural resources, including test excavations. Site evaluation that is performed as an intergral part of survey activities will not be included.

Resources Evaluated -- is the number of cultural properties evaluated by the application of the National Register criteria and/or Regional criteria of significance. Properties evaluated as part of survey work are also counted along with properties evaluated as a separate action.

Resources Eligible -- is the number of cultural properties that have been determined to meet the criteria established by the National Register of Historic Places. It includes all sites determined to be eligible for listing by Forest Service cultural resource specialists, or by State Historic Preservation Officers. Sites determined to be eligible through an official request to the National Register are also counted in this element.

Evaluation Costs -- is the cost of evaluations for the sites counted above. It includes salaries, administrative costs, etc., that were necessary in performing the evaluations.

No Effect Projects -- is the number of compliance actions, projects or Environmental Assessments undertaken for which there were no impacts on cultural resources. It includes projects where cultural properties could be successfully avoided as well as projects which involved no properties or no properties determined significant. Generally no State review is required of these projects.

No Effect Resources -- is the number of cultural properties located in compliance projects that were successfully avoided through exclusion, boundary modifications, or were located outside of any potential impacts, or were determined not to be significant.

No Adverse Effect Projects -- is the number of projects that required significant modification in order to avoid potential adverse impacts on important cultural properties. Includes projects requiring consultation or comment from State Historic Preservation Officers.

No Adverse Effect Resources -- is the number of sites involved in the projects counted above.

Adverse Effect Projects -- is the number of projects that result in adverse impacts on significant cultural properties. Either data recovery, documentation, serious project modification, or data loss results from these actions. Advisory Council comment is required in these cases in addition to State comment.

Adverse Effect Resources -- is the number of properties involved in the projects counted above.

The third category of data elements is a direct result of those evaluation actions which point out potential resource loss or damage that cannot be avoided. In this event, mitigation of the loss is necessary through some sort of data recovery. Even though this type of activity is a relatively rare occurrance, the cost in time and dollars of even a single project can frequently be enormous. For that reason, separate elements are important to measure the frequency and costs involved. In some cases, documentation of a standing historic property is sufficient to mitigate the potential lost. In other cases, a detailed excavation and analysis of buried prehistoric or historic materials is necessary. Six data elements are defined to measure this task.

Data Recovery -- is the number of projects that have been conducted to recover, through archeological techniques, data buried in the ground, or historical information concealed by modern additions to structures.

Resources with Data Recovered -- is the number of sites or properties where data has been recovered as part of a mitigation plan.

Data Recovery Costs -- is the total cost incurred in implementing a data recovery action including field costs, report preparation, and analysis.

Documentations -- is the number of mitigation activities carried out to record cultural properties that are to be adversely impacted. Activities include mapping, photographing, and otherwise documenting the architectural details of standing buildings prior to carrying out actions to modify, demolish, or otherwise to impact the property.

Resources Documented -- is the number of properties documented as a mitigative action in the projects counted above.

Documentation Costs -- is the total costs incurred in documenting the cultural properties counted above.

Another important activity that is of interest is the protection of cultural resources from damage due to illegal digging and collecting. Two elements are sufficient to measure this task, the number of actions taken and the costs incurred.

Resources Protected -- is the number of cultural properties receiving some direct and identifiable protective action during the reporting period. It includes sites protected through the posting of signs, patrolling, law enforcement actions, stabilization, and restoration of damage.

Protection Costs -- is the cost incurred in carrying out the action listed above.

"Enhancement" of cultural resources refers to actions taken to directly benefit the resource or to interpret the resource for the public benefit. It is important to know how often such actions are taken and what costs are associated. Enhancement through understanding and interpretation of the resource values is the primary product of the cultural resource program. Although most of the actions taken are the result of legally mandated requirements, the enhancement of the resource is the public payoff and the primary reason that cultural resources are

considered to be important.

Enhancement Projects -- is the number of projects undertaken to benefit cultural resources or enhance cultural properties. It includes direct and indirect interpretation, restoration, rehabilitation, interpretive brochures, audio-visual presentations, research activities, publications, etc. Compliance actions that result in beneficial effect determinations would be included here.

Resources Enhanced -- is the number of properties involved in the projects counted above.

Enhancement Costs -- is the total costs for the projects and actions counted above.

With the exception of the nomination of sites to the National Register, these data elements cover the requirements of the National Historic Preservation Act. There are other important tasks that are and should be carried out by the Regions that are of importance in assessing the program. Additional elements are needed to record these actions. Each management unit is involved in planning on a series of different levels. Forest Plans, Regional Plans, and Project Plans are prepared which must include cultural resource consideration. Area and regional syntheses of cultural resource data are done in support of planning and decision-making. Documentation of previously recorded cultural properties is necessary to establish baseline data for the program. Nine additional data elements are defined to account for most of these activities.

Cultural Resource Plans -- is the number of plans prepared for special cultural resource activities such as enhancement, research, protection, and interpretation.

Planning Costs -- is the total cost incurred in the planning activities reported above.

Cultural Resource Overviews -- is the number of overviews prepared during the reporting year.

Overview Acres -- is the number of acres included in the overviews reported above.

Overview Costs -- is the total cost incurred in preparing the overviews counted above.

Cultural Resource Overview Updates -- is the number of overviews modified during the reporting period by the addition of new data or research information.

Update Acres -- is the number of acres involved in the updated overviews reported above.

Update Costs -- is the total cost incurred in preparing updated overviews.

Cultural Resource Reports -- is the number of major cultural resource technical reports prepared or published during the reporting period. This does not include the project reports prepared for surveys or evaluations unless they are of major importance and considered of professional publication quality.

This preliminary set of data elements were reviewed by archeologists from each Region and the definitions for these elements were agreed to through a consensus process. Data needed for internal analysis and for meeting external reporting requirements was considered and determined to be included. A set of activities common to all Regions were defined and were accepted as measures of the activities of the cultural resource program. Comparable data could be collected that would provide the means to evaluate the efficiency and effectiveness of the cultural resource management program. Regions would be compared in terms of their cultural resource potential, workloads, the complexity of their programs, and their accomplishments.

Having defined and agreed upon a set of data elements to measure some of the variety of cultural resource tasks performed on an annual basis, it is of importance to be able to compare the frequency with which these tasks are performed in support of other resource programs. For that reason, ten activity areas can be defined following the administrative organization of the agency. Except for the cultural resource management activity, identical sets of elements are reported for each of these resource areas. This approach permits the comparison of the levels of required support to meet cultural resource regulations in the production of timber, minerals, range, recreation, wildlife, watershed, etc. Unit cost calculations are also possible from these data that can benefit budget and planning activities.

In addition to the activity areas defined, it also is of value to be able to identify the amount of work performed through other than Forest Service personnel. To accomplish this another activity class is defined in which to report the work done through contracts. Although it might be of value to distinguish such work in each of the activity areas defined, it seems to be enough at this time to measure total contract work. Some comparison of unit costs between contracted and Forest Service conducted tasks is possible using these totals. Should it appear that there is a significant difference between work performed in-Service and that obtained through contracts, it might be

necessary to look at separate activity areas in the future. Given the amount of time involved in gathering contract data, it seems better to limit the number of data elements at this point in the study.

The major component of the proposed report form consists of the data elements, defined above, arranged in rows. Activity areas are represented as columns. Two columns are placed at the end of the rows to record totals of Forest Service and non-Forest Service contributions to the program (see Appendix A). Specific cultural resource activities that can be associated with MIH coded categories are identifiable and can be aggregated, where necessary, from two or more data elements.

Since this proposed report has no National antecedent, figures are needed that will allow the accumulation of totals for major program tasks. In order to be able to compare the reported number of acres surveyed against the number of acres remaining to be surveyed, for example, one needs to know how many acres have been surveyed in prior years. To obtain this information on prior years, a second section of the report form was included. Labeled Part II (Appendix A), this section repeats many of the categories from Part I for the reporting year. It also provides a column for reporting totals from previous years of work and a column for accumulating current totals. After the first year of use, the reporting unit would need only to report the current fiscal year's figures.

Most of the figures needed for completing Part II, column b, come either from the total column of Part I or from the lower section of the CRM activity column. Some of these data are not found elsewhere on the report, however. The number of sites located, for example, is re-entered from Part I but two new subcategories, historic and prehistoric, allow for distinguishing between two major program emphases. Since these categories are not mutually exclusive, a single site may be either historic or prehistoric or both. There is, therefore, no way to aggregate or disaggregate these numbers from total sites. Other new categories include the properties and districts nominated and listed in the National Register of Historic Places and the numbers of National Historic Landmarks nominated and listed.

Even though Part II repeats data elements reported elsewhere, this data subset conforms more closely to the reporting requirements of the Secretary of Interior and makes the preparation of the Forest Service report to Congress under the 1974 Reservoir Salvage Act a simple task. It provides a summary of the program results in terms of survey accomplishments, properties identified and evaluated, properties nominated and listed, and overview reports prepared.

The only data missing from the report at this point are those data required by the Secretary of Interior on various cost categories of projects conducted. Since precise costs of each

project are not required, it appears simpler to request an accounting of projects by various cost levels. A third part of the form is included to report the number of projects in seven different cost categories and three different project types, survey, evaluation, and mitigation.

This three part form contains all the data elements determined to be necessary for measuring the amount of cultural resource work being performed annually. Elements are included that allow external requirements to be met in reporting the accomplishments of the Forest Service CRM program. Other data, useful in budgeting and planning, are provided for internal utilization. Data elements are compatible with existing data sets being compiled by Regional systems and match the categories established in the MIH system. The amount of information requested should require a minimal effort for each of the reporting units and provide maximum usefulness.

There are probably difficulties with the definitions established that will require testing to identify. Other data elements may be identified and some of the existing ones may be determined to be extraneous. These can only be identified by testing. At this point the Cultural Resources Accomplishment Report Form is ready to be distributed to the Regions for the collection of the data identified.

Having designed a form to record the data defined, and having

received the approval of the Chief, a supply of forms prepared by the Government Printing Office was distributed to each of the nine Regions of the Forest Service. The Regional Preservation Officer (Regional Archeologist) was responsible for the accumulation of the requested data. In turn, each Region sent copies of the form to the Forest Supervisors' offices for completion. In most cases, the Forest Archeologist was responsible for compiling the necessary data. Data were collected from Forest and District records and compiled into a single Forest report. Each Forest then sent this form to the Regional Office for accumulation into a single report for the Region. In some Regions, data available in computer files allowed the Regional Office to extract some of the data sets requested. Beginning in June of 1983, Regional data began to arrive in the Washington Office. By November all Regions had reported on the data requested.

Treatment of the Data :

As each Regional summary was received, the data were transferred to microcomputer using an electronic spreadsheet program. The spreadsheet program was prepared to provide automatic totals of the rows of data in Part I of the form. This provided a quick check of the mathematics and located a number of errors in the data submitted. The spreadsheet program also automatically transferred data from Part I to Part II of the form where applicable. This not only saved time in entering the data but

served to locate a few errors in the Regional data. Once completed, the entire data set for each Region could be instantly recalled and reviewed. The computer also permitted the selection of data from each spreadsheet and its transferal to other programs which would display it graphically.

After all the Regional summaries were entered, a National summary of the data was prepared. Although the intention was to utilize a computer program to automatically aggregate these data, the failure of the company to deliver this program on schedule required the manual addition of the regional data sets into a combined summary form.

Since the primary purpose in accumulating these data on the accomplishments of the cultural resource management program is to initiate a system of measurement that will be useful in administration and planning, there is little need for statistical treatment of the data collected. Of more use is the comparison of Regional accomplishments in various areas and an examination of unit costs for major program activities as computed from these data.

CHAPTER 4

ANALYSIS OF DATA

Findings and Problems:

The first problem encountered with the Cultural Resource Accomplishment Report was the misprint by the Government Printing Office on line 4 of the Report (Appendix A). Instead of reporting units reading "Numbers" the unit was printed as "Acres". Although the Regions were notified of the error, some of the data received from Region 8 contained obvious errors in this element. Since this was the only Region that submitted forms for each Forest, this was the only data where this type of error could clearly be determined. The data from other Regions appeared to be as expected for this element.

The second problem encountered, and the most serious, was the lack of certain types of information. Several Regions either were unable to furnish certain data or had to provide estimates. This was somewhat as expected since not all Regions has been keeping track of their cultural resource projects. The scope of the problem was larger than anticipated, however, when the Southwest Region could not furnish several categories of data. Since they had had a computerized project data base for several

years, it was expected that they would have little problem assembling the data requested. Upon the receipt of the report form they discovered that several of the Forests had not entered data into the Regional data base and these Forests could not assemble the figures being requested. Other Regions had similar problems but not of the same scale. A summary of the problems encountered includes:

> Region 2: non-Forest Service costs are not included. Some evaluation costs are included in survey costs. No place to record acres surveyed as part of evaluation and data recovery projects. Irregular survey units in timber sales make record keeping very difficult and acreages are estimated.
>
> Region 3: no data are furnished in some categories because no records have been kept. Survey costs are not included because of lack of records. Data on prior fiscal years is mostly incomplete due to paucity of records.
>
> Region 4: Some of the figures reported are estimates since inadequate records of these data elements are all that are available.
>
> Region 5: Form did not allow distinguishment between money spent by non-Forest Service organizations and Forest Service expenditures. It is useful to distinguish between contract work and Forest Service actions. Forests seem to be confused about data elements 11 through 16 and data are not as reliable as preceding categories. The treatment of acres of survey accomplished through sampling is a problem.

In examining the comments received, it is clear that the absence of systems for tracking the efforts expended in cultural resource management created the majority of the problems encountered. There is no way of allowing for this absence of data beyond the realization that the data reported are not precise. It is expected that these data will improve in future reports as the

Regions implement systems to track and accumulate the figures needed. From this perspective, the project might accomplish one of its major goals, that of encouraging Regions to implement a system for measuring cultural resource activities.

The problem with definitions of certain data elements is relatively easy to resolve through redefinition. Having identified the types of questions being asked about certain elements, new definitions can be expressed that will clarify the reporting. In one or two cases, some reevaluation of the data request might lead to the elimination of some categories of data. In other cases, some additional elements may be justified to report important categories of information. The amount of non-Forest Service contribution to the program through volunteers and third party actions such as oil and gas exploration is probably an important item to identify. Such contributions to survey acres, projects undertaken, sites located, etc., could significantly affect the unit costs of such actions to the Forest Service unless they are identified.

Work and Products:

National Forest System --

For the first time in the history of the Cultural Resource program, data are available about the scope of the program. Some

6,200 separate surveys were conducted on a total of 2.25 million acres of National Forest System lands and over 10,000 new cultural properties were identified. These same surveys cleared the way for projects affecting 2.8 million acres of NFS lands. Each of the resource activity types contributed differently to the total acreage surveyed (Figure 1). Acres cleared for project continuation generally exceeds the acreage surveyed but the percentage varies with resource activity type (Figure 2).

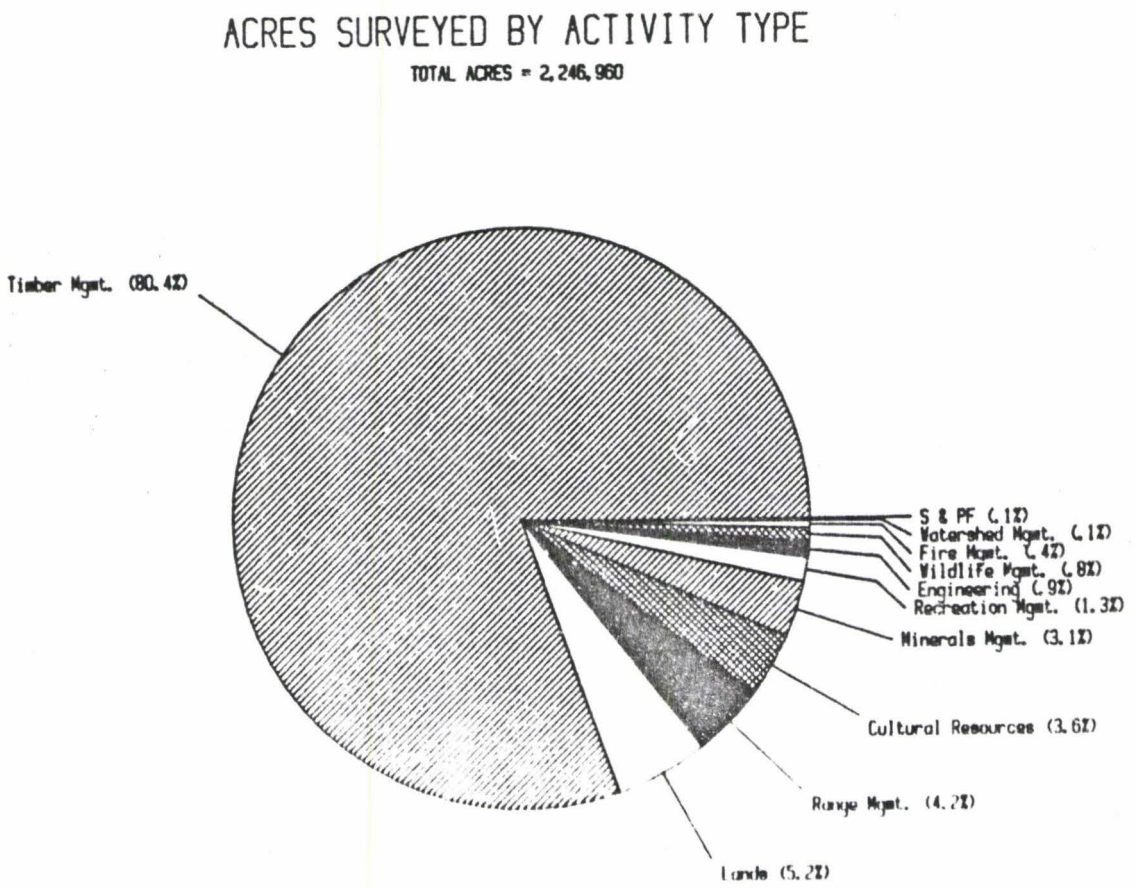

Figure 1

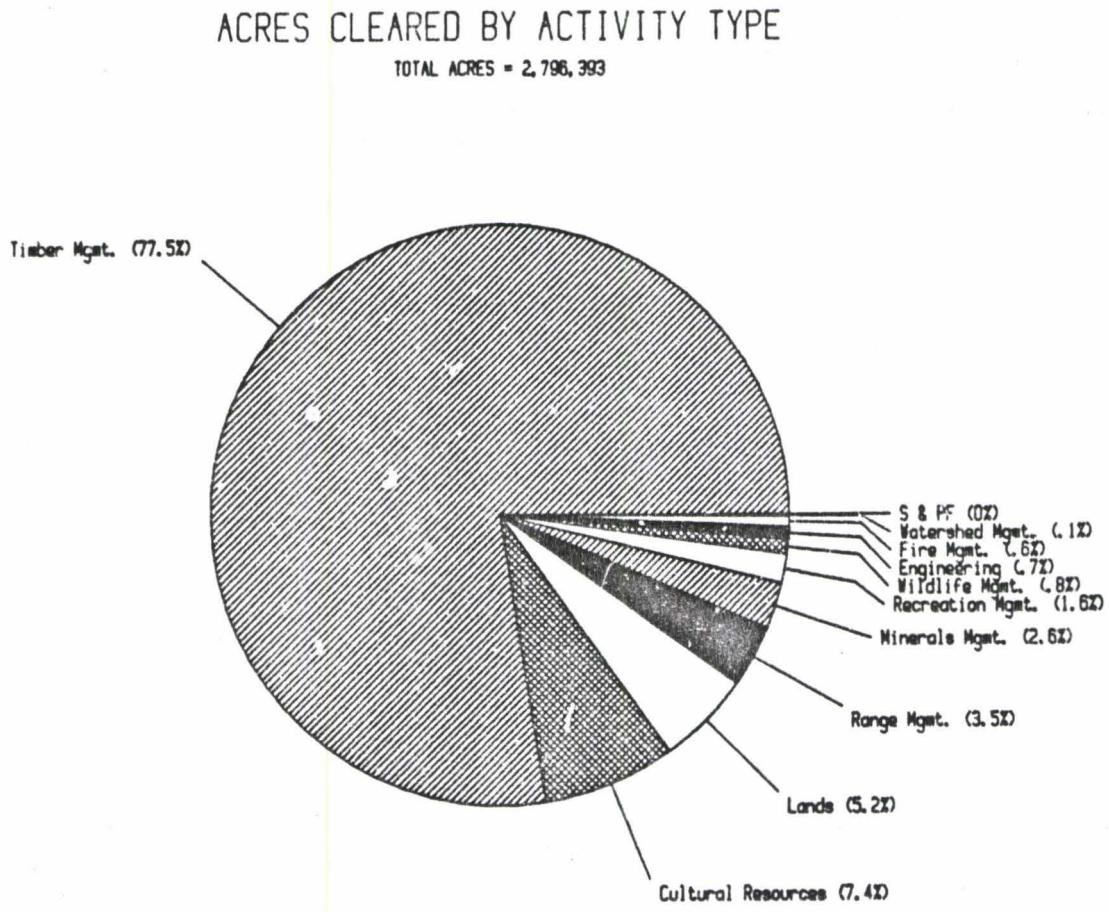

Figure 2

Of the 10,050 prehistoric and historic sites identified during survey activities, nearly 3000 were evaluated for their importance in the course of some 700 evaluation projects. Of the properties evaluated, 83 percent were determined to be eligible for nomination to the National Register of Historic Places (Table 1).

TABLE 1

NATIONAL SUMMARY OF CULTURAL RESOURCE ACCOMPLISHMENTS

Element	Projects	Sites	Acres	Cost
Surveys	6200	10050	2,2469%0	4,369,714
Evaluations	695	2915		527,480
Data Recovery	53	70		379,564
Documentation	136	85		35,476
Protection		1854		95,956
Enhancement	123	357		89,327
Planning	57			124,010
Overviews	58.75		24,565,734	300,627
Updates	17		4,714,121	14,095

Of the 6200 survey projects conducted, only 411 resulted in some adjustment in the proposed development activities in order to avoid impacting cultural properties. Only 51 projects involving 158 cultural properties resulted in unavoidable adverse impacts on important cultural values. Eight-tenths of a percent of the survey projects conducted neccessitated consultation with both the State Historic Preservation Officer and the Advisory Council on Historic Preservation about mitigating the adverse impacts of proposed projects.

Data recovery projects totaled 53, involving 70 different cultural properties. In addition, another 136 projects were carried out to preserve, through documentation, information about cultural properties being adversely affected. Some measure of protection was afforded some 1800 properties while 123 projects

while 123 projects were undertaken to provide Forest visitors with information about some 350 properties. These enhancement projects range from publication of brochures to on-site interpretation (Figure 3).

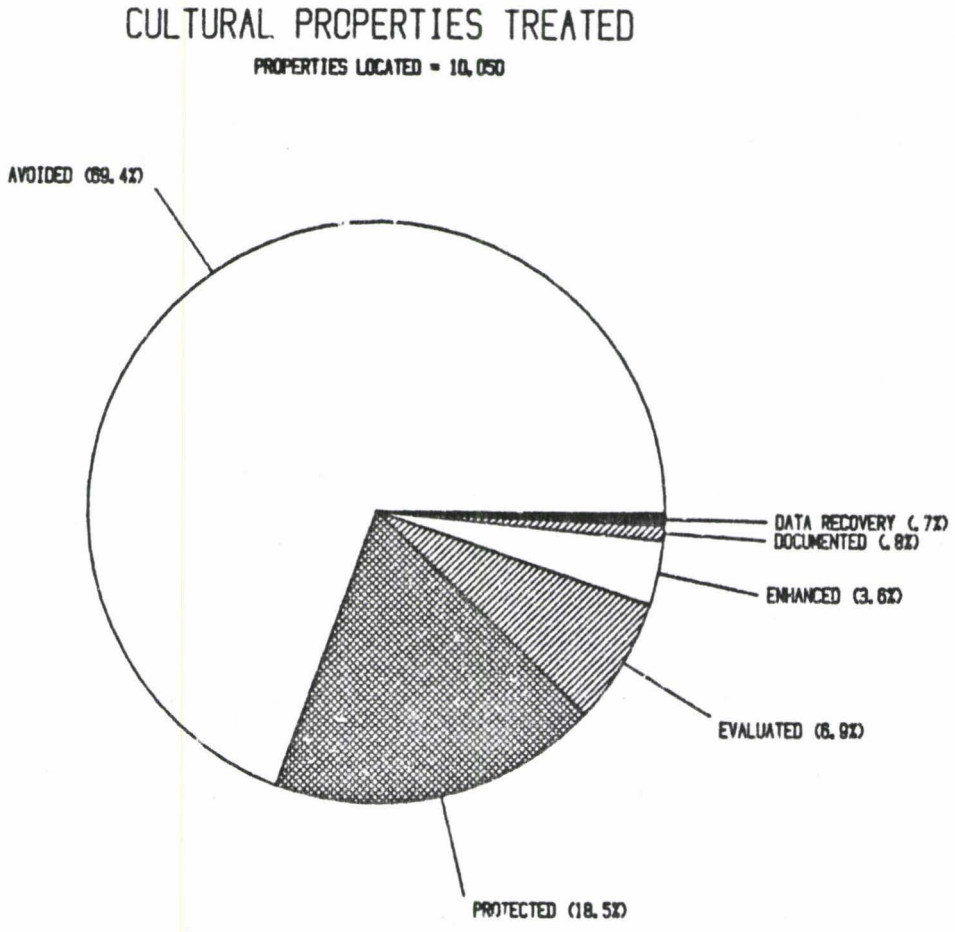

Figure 3

Fifty-seven cultural resource plans, 59 overviews, 17 updated overviews, and 1,181 major resource reports were prepared affecting 29.3 million acres of National Forest System lands (Figure 4).

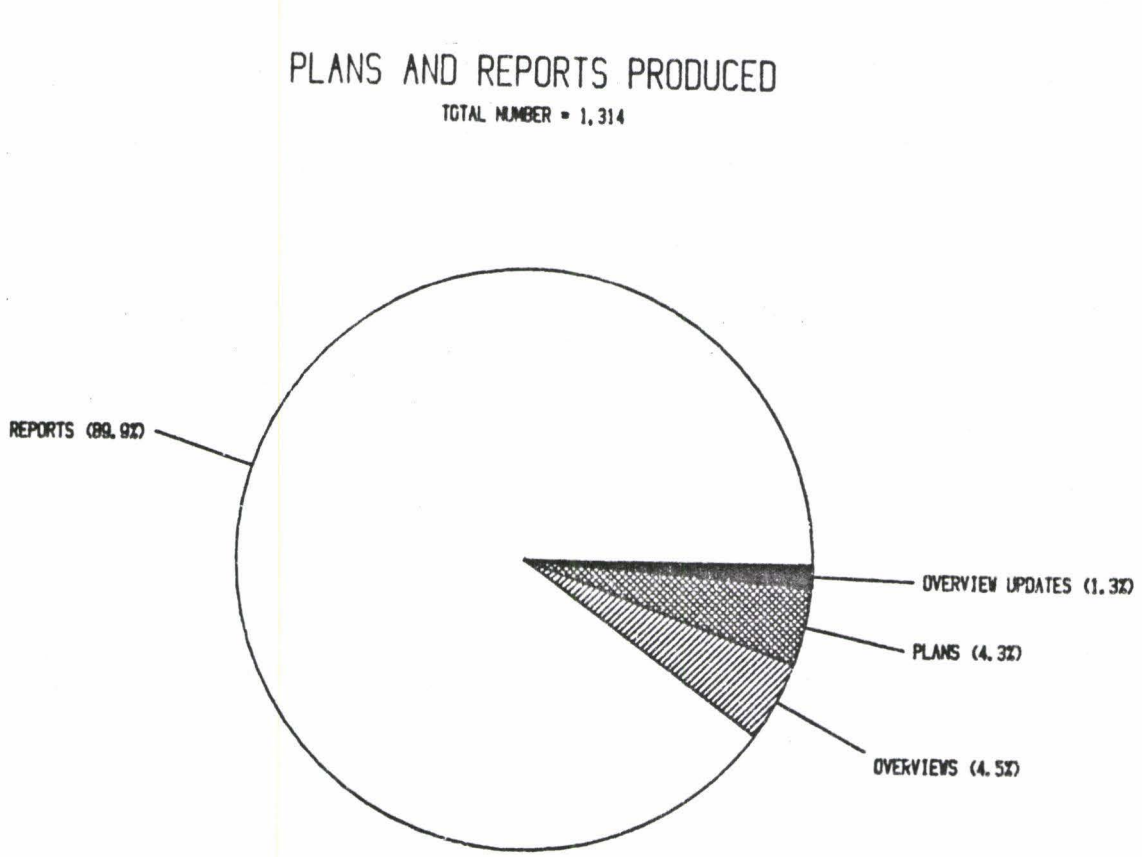

Figure 4

One of the major objectives of the program, the identification and treatment of cultural properties, is now measurable over a range of different accomplishments. Even though the data from previous years is less than complete, one can still perceive the scope of the resource thus far identified. It is also possible to see the affect of fiscal year 1982's activities on the total resource. Percentages of the accumulative totals indicate that the work done in 1982 represents from 6 to 47 percent of all

for nearly 12 years, these results indicate that the work performed in 1982 produced a larger share of accomplishments than expected. Only in sites and districts nominated to the National Register of Historic Places do the FY1982 figures fall below the 8.17 percent (1/12th of total) expected had each year's contribution to the total been equal (Table 2).

TABLE 2

SITE DATA - NATIONAL SUMMARY

Element	Prior Years	Current FY	Percent of Total	Total
Historic Sites	22,773	4926	17.78	27,699
Prehistoric Sites	36,829	5052	12.06	41,881
Total Sites	60,068	10,050	14.33	70,118
Sites Evaluated	10,986	2,915	20.97	13,901
Sites Eligible	5,184	2,419	31.82	7,603
Sites Nominated	180	37	17.05	217
Sites Listed	205	13	5.96	218
Districts Nominated	30	4	11.76	34
Districts Listed	24	2	7.69	26
Landmarks Nominated	15	0	0.00	15
Landmarks Listed	12	0	0.00	12
Sites Protected	5,523	1,854	25.13	7,377
Sites Enhanced	396	357	47.41	753

Regions --

The difference in acres surveyed varies widely from one region to another. Each region has contributed a different proportion of the 2.25 million total acres examined. Differences in accomplishment appear to be the result of staff size, terrain and

ground cover, densities of cultural resources, and regional funding levels (Figure 5).

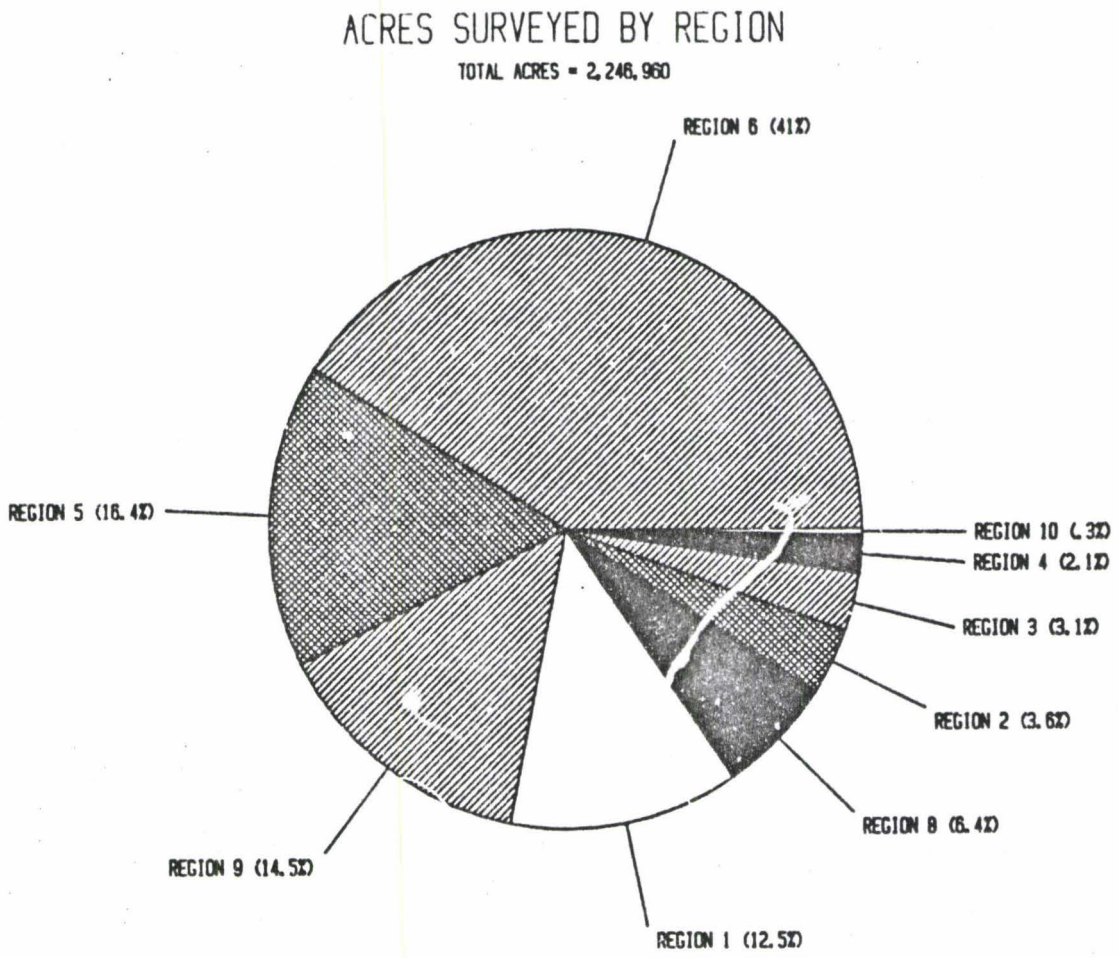

Figure 5

Comparing the proportions of the sites identified during the fiscal year by each region (Figure 6) with the amount of area examined shows little coorelation. Although Region 6 contributed 41% of the acreage surveyed, it located only 12% of the total number of sites identified. Differences in the densities of

historic and prehistoric properties between regions is most likely the major cause of this variation.

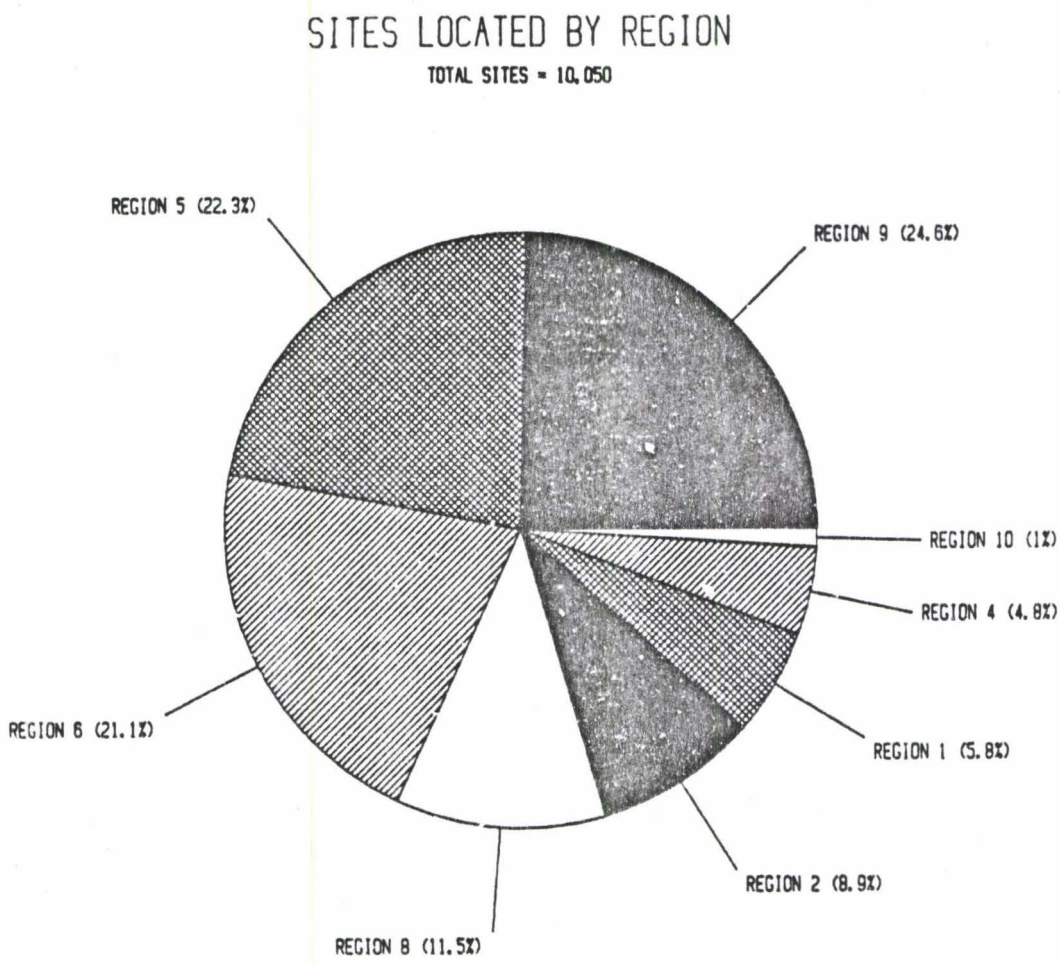

Figure 6

The percentage each region contributed to the total number of cultural resource documents prepared during the year shows considerable variation. The difference in these numbers is probably more the result of reporting biases than any other factor. Some regions counted each report prepared while others

counted only major documents. The instruction to count major, publishable quality contributions to science, were insufficient to illicit similar responses by all regions. For example, although Region 6 carried out surveys on 41% of the total acreage, they counted only 2.7% of the reports prepared while Region 8 has percentages of 8.4 and 22.8 respectively (Figure 7).

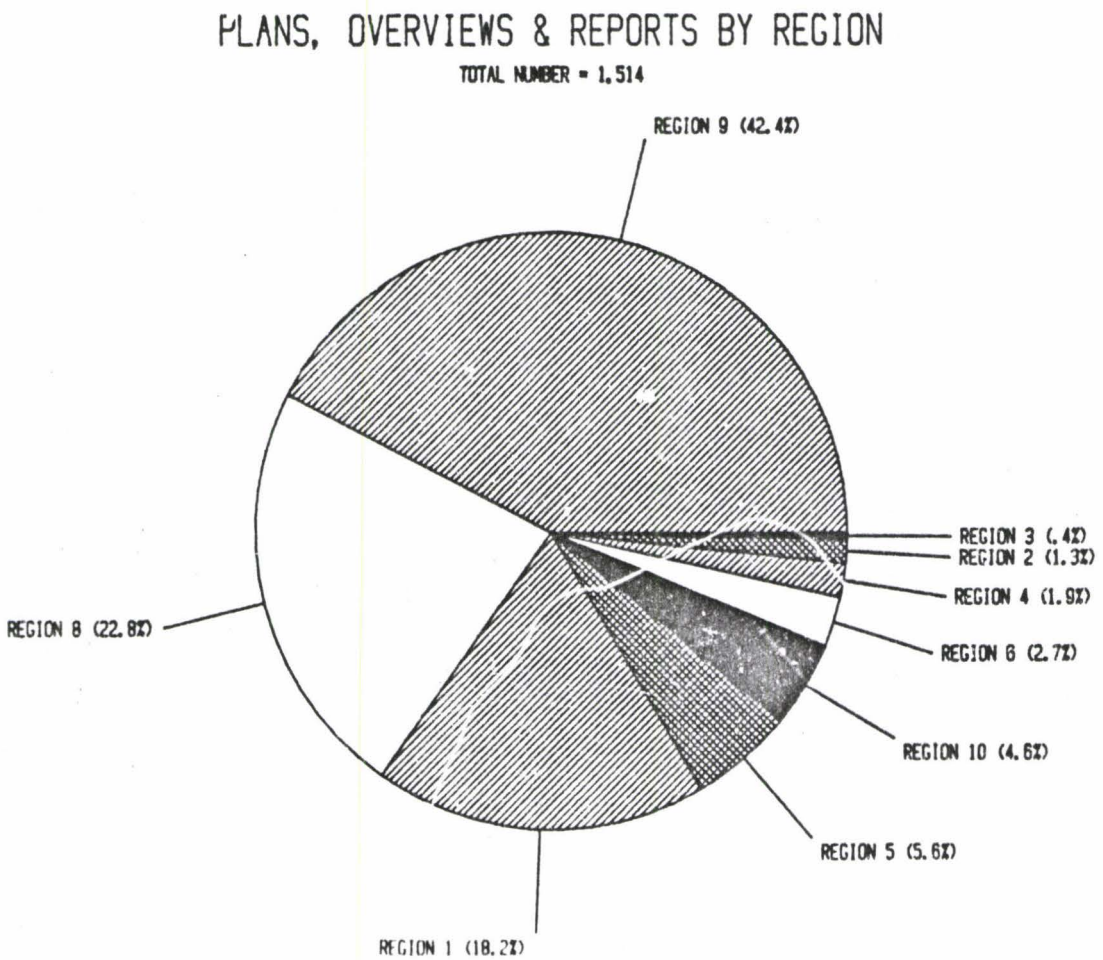

Figure 7

Another area of particular importance is the difference between the number of sites located and the number of sites that are unevaluated. The growth of large numbers of unevaluated cultural resources is becoming a major management concern (Figure 8). With the exception of Region 2, all reporting regions show that more than one-half of all sites located are not evaluated. The backlog of such questionable sites is likely to assume significant proportions in a relatively short time.

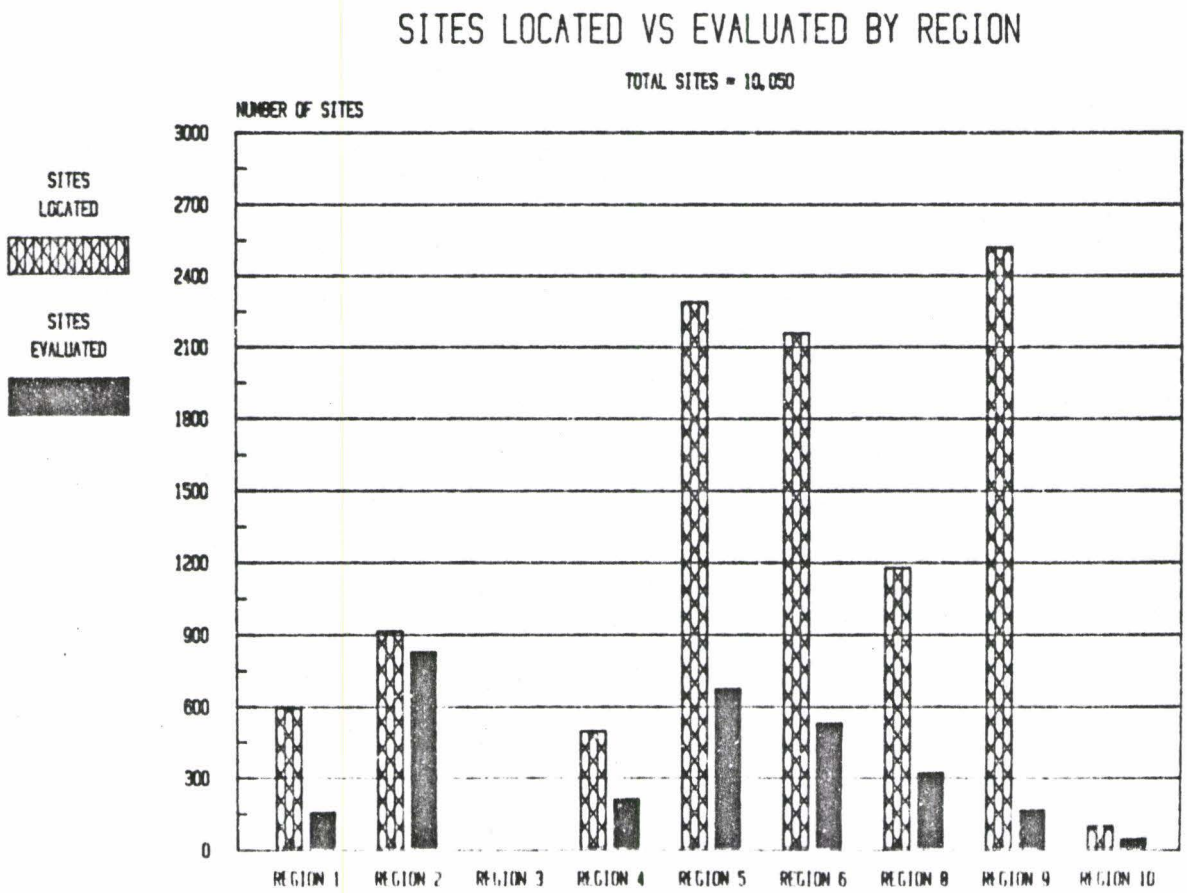

Figure 8

Program Costs --

In computing unit costs for various aspects of the program, two computer runs were necessary to provide element totals and unit costs, since the Southwest Region did not supply cost figures for many of the elements. Had the unit costs been computed with these partial data included, the results would have been erroneously reduced. The second computer run was made with all incomplete data sets from the Southwest Region removed. For example, where they reported acres of survey but did not provide corresponding costs of survey, the acreage figure was removed from the summary tables for the National Forest System. The resultant adjustment upward for unit cost calculations varied from a relatively minor .2 percent to a substantial 13.4 percent per activity type and a difference of 3.5 percent on average survey figures. The unit cost figures used here were generated by dividing the total cost of an element by the number of units accomplished (Table 3). Some elements contain more than a single unit of measure and unit costs were computed for all measurements reported.

TABLE 3

UNIT COSTS - NATIONAL FOREST SYSTEM

Element	Cost Per Acre	Cost Per Site	Cost Per Project
Survey - acres exam.	2.01	434.80	704.79
Survey - acres clrd	1.65	434.80	704.79
Evaluation		180.95	839.94
Data Recovery		5422.34	7161.58
Documentation		253.40	417.36
Protection		51.76	
Enhancement		1258.13	1076.23
Planning			2175.61
Overviews	.01		5117.06
Overview Updates	<.01		829.12

The proportion of total program costs borne by various types of resource activities clearly demonstrates the dominant role of timber management in cultural resource work (Figure 9). Comparing timber survey costs with survey acreages (Figure 1), it is of interest to note that such projects contribute 80% of the acres surveyed for 53% of the program costs. Land exchanges, right-of-ways, and other land projects, on the other hand, generate 11% of the program costs and contribute only 5.2% of the acres surveyed.

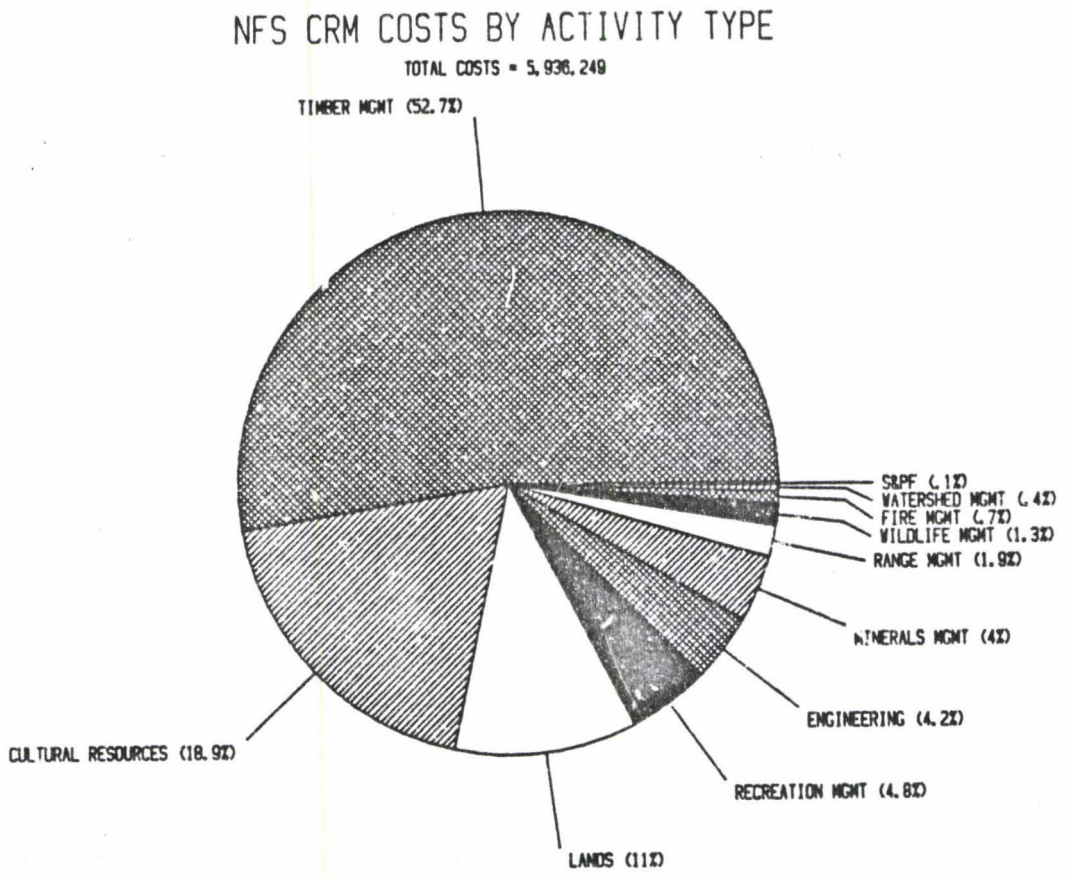

Figure 9

The proportions of the total program costs incurred by each region show wide variation from one region to another. With the exception of Region 3, the order of these percentages reflects the current cultural resource staffing levels in the regions. Region 3 did not include any costs for survey activities, a major portion of the program, hence their costs are the least of any region. The Southwest Region should be between Region 4 and

Region 8 on this chart judging from the size of their current staff and their annual appropriation for cultural resource activities (Figure 10).

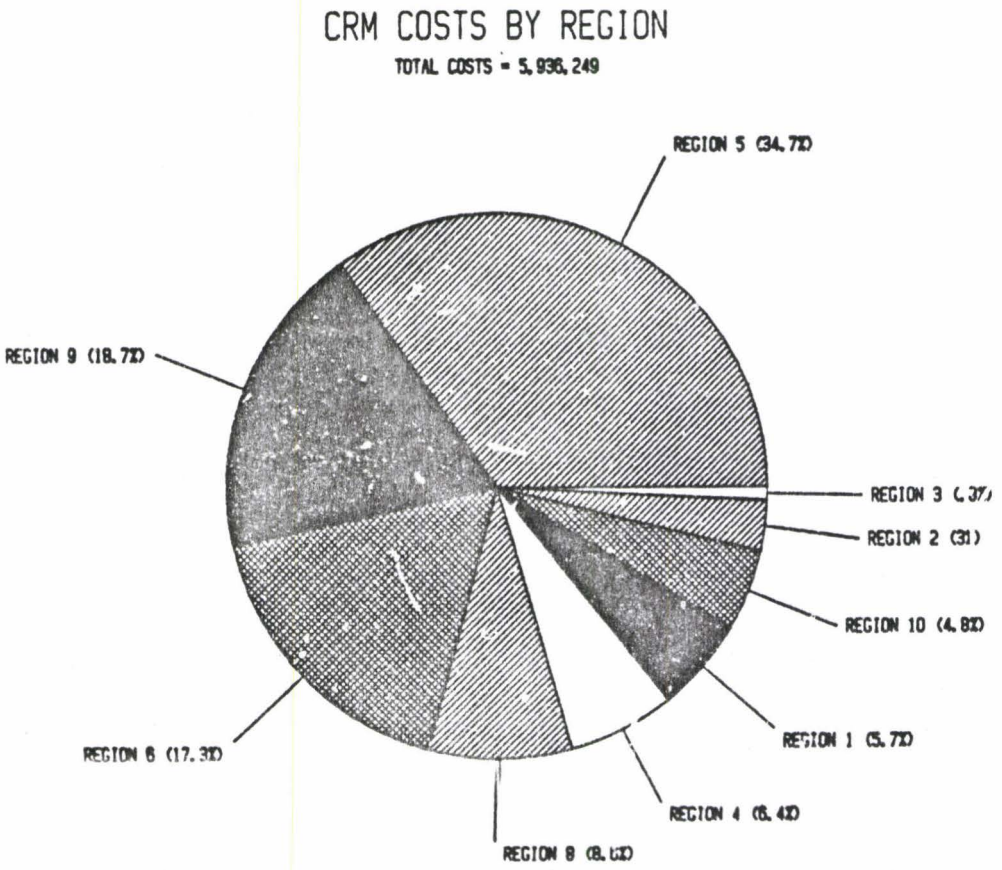

Figure 10

Estimates of unit costs for survey have been bantered about for over a decade by various individuals. The data from fiscal year 1982 show for the first time that, except for Regions 4 and 10, all regions spent less than $5.00 per acre, some significantly

less (Figure 11). Region 4's costs were slightly over $5.00 per acre while Region 10's costs are very high. It is likely that Region 10's high costs are due to the expense of transportation and difficulties of access to projects in Alaska.

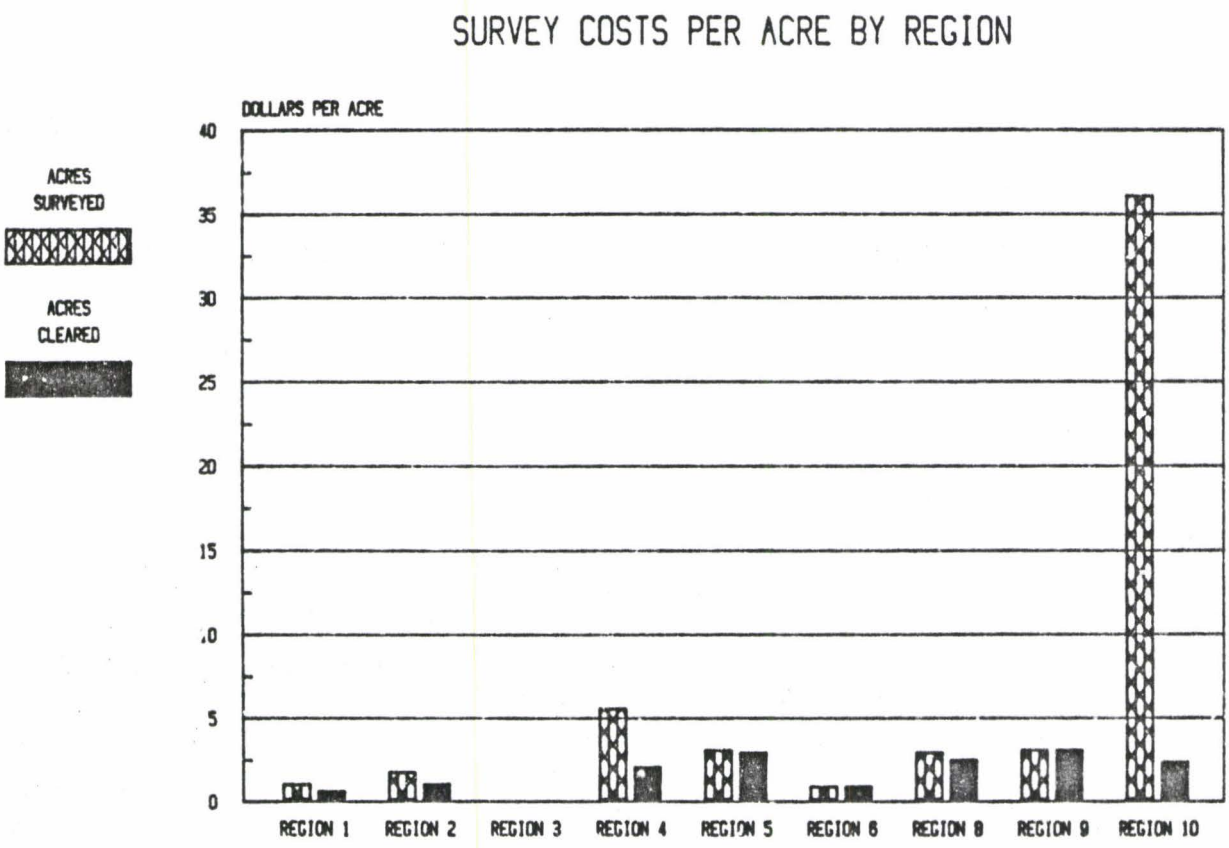

Figure 11

Survey costs per project show considerable variation but not the extremes shown in figures for costs of survey. Region 5 and Region 9, whose acre costs are low, show relatively higher unit

costs for projects, probably indicating that their projects usually involve more acres than do those in other regions (Figure 12)

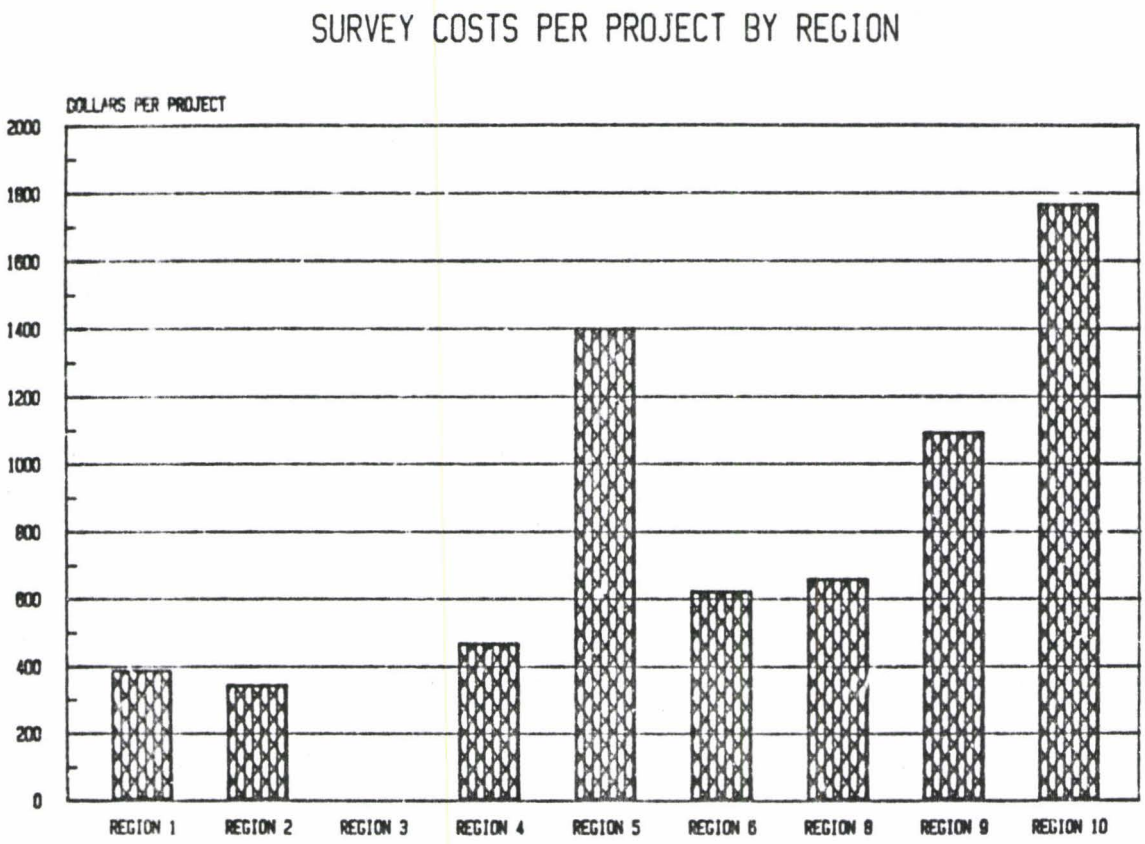

Figure 12

All regions except Region 10 spend $500 or less per site in locating cultural resources. Region 10's costs are very high, probably for the same reason that its survey cost per acre is high. Region 2 claims the lowest per site cost, while the

remaining regions show little variation in unit costs from the $500 figure (Figure 13).

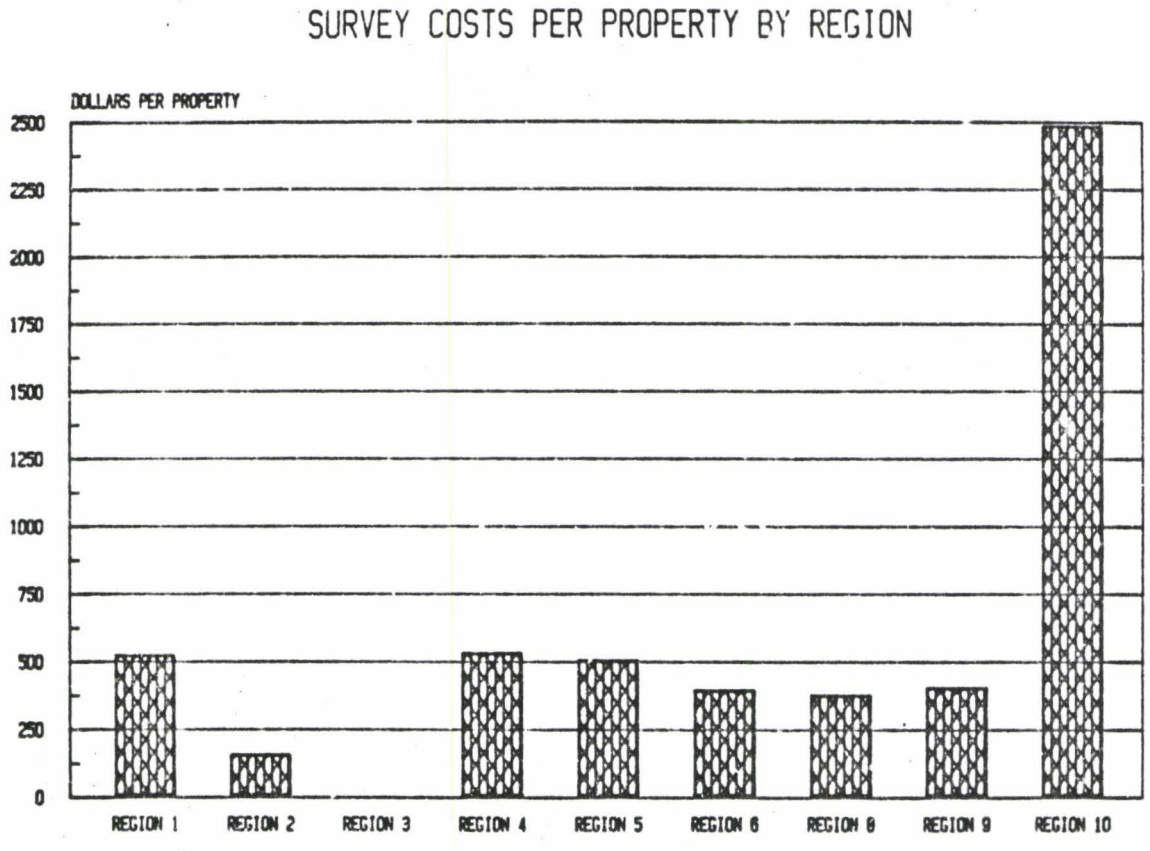

Figure 13

There is a great range of variability in the cost of recovering data from a site from one region to another. The difference of over $13,000 per site between Region 1 and Region 5 almost demands further explanation. Is this due to site complexity, artifact frequency, or local recovery methods? (Figure 14).

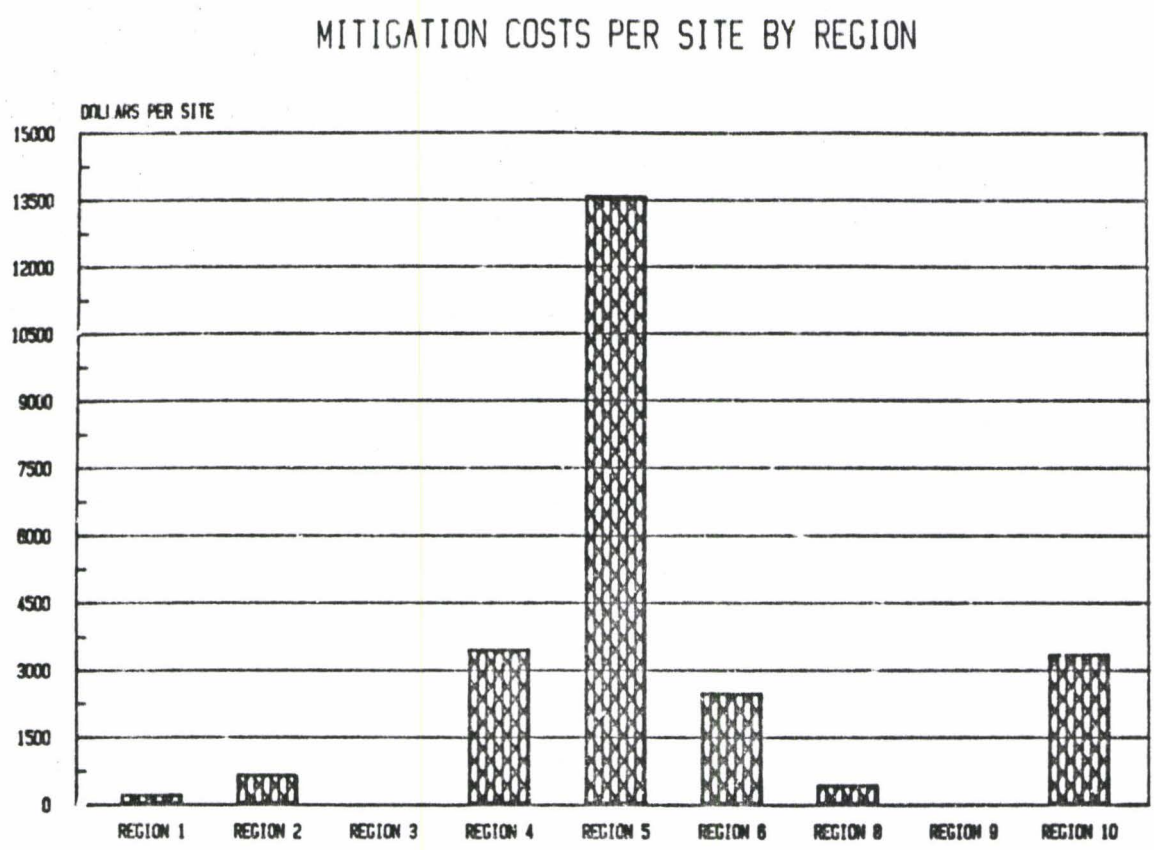

Figure 14

In spite of the bias that might be expressed in these figures, they are still extremely useful in establishing a set of parameters for the National Forest System's cultural resource program. Coupled with figures obtained annually from the Regions, these data will allow managers to more accurately predict future costs of various types of activities.

A great deal of time could be spent in analyzing all of the data collected during this project and many important relationships could be discovered that would be useful in the management of the cultural resource program.

SUMMARY AND CONCLUSIONS

Summary of Procedures and Findings:

A considerable amount of effort has been expended in the examination of various types of cultural resource information data bases. Several Regions have designed and implemented one or more data bases to record information about cultural properties and projects undertaken. A National task force has addressed the propriety of establishing a "National Data Base" for cultural resource information as have several inter-Regional meetings. Although the results of these efforts indicated such a data base would be useful, little agreement about the specific content was ever reached.

The project described in this paper is largely the product of the many efforts which have preceded it. The author's involvement in the design of Regional data bases in the 1970's provided much of the experience required in the design of this current system. Reviewing past work and contributions to cultural resource information systems was particularly helpful in designing the format of this project and in selecting specific categories of information to be included.

Once the reporting form had been designed and printed, copies were furnished to each Region for completion. Most Regions sent copies to Forest Supervisor's offices for compilation of these data and then consolidated them into a single Regional report. Accompanying element definitions were utilized in the selection and recording of appropriate information.

Once the reports were returned to the Washington Office, the data were transferred to electronic spreadsheets where totals were automatically computed and where the few errors found were highlighted. Several manipulations of these data were undertaken by computer to produce subsets of various elements deemed important in describing the cultural resource program and to produce unit cost figures for several task groups. All Regional reports were consolidated into a single spreadsheet to produce National totals and unit costs.

Although the findings are neither surprizing nor unanticipated, the results do provide the first figures describing the scope and scale of the cultural resource program. Although there are problems with missing and inaccurate data, the resultant data are extremely useful in the analysis of the program. Already several Regions have been using their collected data in the allocation of program funds and in the assignment of cultural resource targets. Charges of exhorbitantly high costs for various types of cultural resource work have been dispelled by providing relatively

accurate data. The relative impact of cultural resource management on other resource activities is also much clearer now than prior to this study.

Some of the figures that have resulted from the analysis of these data raise questions that will require additional evaluation. These data will likely lead to an examination of possibile ways to reduce unit costs, increase productivity, or simplify procedures. Acreage targets utilized in the budget process can be adjusted to realistic proportions using the data provided by this study.

Conclusions:

Based upon the findings and within the limitations of this study, it can be concluded that the Cultural Resource Accomplishment Report yields data important for budgeting and planning purposes. The data elements selected give useful information for measuring the scope and complexity of the program. The form used in collecting these data is acceptable but requires a few minor adjustments in operational definitions and data categories. The parameters of most of the major cultural resource tasks are adequately defined both in total size, size by Region, and unit costs. These data provide a base line for the continued measurement of program output in future years.

Discussion and Implications:

Although the great complexity and variety of the cultural resource program activities has been implicitly realized for several years, the data produced through this study make explicit the range and quantity of those activities. Some other federal agencies have been reporting on the cultural resource projects carried out each year, but most of these reports are merely uncompiled bundles of forms, each representing a single project. The Department of the Interior has been reporting to Congress on the scope of federal cultural resource activities for several years, but their data do little more than summarize the federal agencies' total costs and numbers of projects. Their data do not allow the indepth analysis of program costs and outputs necessary for management purposes.

The data collected in this study have been and will continue to be useful as a tool in adjusting program budgets. Several Regions have already used their Regional data to adjust the budget allocation process on their Forests. The Washington Office has used some of the figures to adjust and clarify the Regional targets for survey in Fiscal Year 1985 budget advice. It is anticipated that the release of all Regional and National data sets will generate many questions, cause the evaluation of several important aspects of the program, and result in a more precise understanding of the relationship between cultural resources and their impact on other resource activities.

As data are collected in future years, it will become possible to construct program trends, project future needs and impacts, and build budgetary relationships that will compute appropriate funding levels for cultural resource support activities given specific resource output targets in other areas. The data presented here will provide the baseline data that will allow the Forest Service to measure the affect of procedural and methodological changes in the program through comparison of before and after results and unit costs.

Recommendations:

Although this project can be considered completed, it has, in fact, established an ongoing system for the annual reporting of cultural resource accomplishments. What needs to be done now is to fine-tune the reporting form and definitions in order to improve the quality, accuracy and consistency of the data being collected. Several categories of information need to be added to the report form in order to obtain data found to be important to the analysis of the program. The number of full and parttime cultural resource specialists employeed in producing the outputs reported is an important factor not requested in the 1982 report. Determining the affect of non-Forest Service actions on output targets is important in some Regions. Where a considerable amount of survey, evaluation and data recovery is carried out at the expense of oil and gas companies or other non-Forest Service

groups, these effort need to be separable from Forest Service produced outputs. Similarly, the effort expended by volunteers to conduct cultural resource activities needs to be identified in order to properly adjust unit costs figures.

Several data elements proved to be troublesome during the data collection aspect of the project. Redefinition of these elements and training of Regional personnel in applying the definitions would increase the compatibility and comparability of the data collected. The concepts of "acres surveyed" and "acres cleared" appeared to present some difficulties to many of those completing the report. Cost data were difficult for some Regions to produce and some study of budget and accounting systems in use is warranted to determine if there are other ways of obtaining accurate data. The concept of "evaluation project" was another element that raised questions. Some redefinition and evaluation of the concept is needed. Of limited importance but an obvious problem is the element "reports". The variation in this data element indicated wide disagreement as to what was wanted here. A more precise definition is necessary for this element in order to elicit compatible responses from the field.

The data collected during this study and those that will be collected in future reports need to be closely examined by management units at all levels. There are a great many other important relationships to be evaluated in this data set. It would be of great utility to develop a system of analysis for

these data in future years to extract the most useful information for program budgeting and planning. Measures of work and products produced on a National scale should be developed that can be integrated into other program management activities. Regional data set could also be evaluated for similar inputs into regional budgeting and planning activities. Cost data computed from these data would be of use in identifying relationships between various resource activities and the need for cultural resource support services. Standardized units of measure would permit year to year comparison of results. As data from future years are assembled, program trends can be projected. Some particularly useful sets of trendline analyses should be developed that provide immediate utility in management planning at both the National and Regional levels.

As multi-year figures are assembled activity trends need to be developed and integrated into planning documents such as Forest Plans and Resource Planning Act plans. Unit cost calculations should be carefully examined and applied to budget planning and decision variable construction where applicable. If unit costs now being used are inaccurate, they should be replaced with costs supported by these data. Similar approaches would be useful at both the regional and National level.

It is recommended that each Region implement the means to accumulate these data during the year, probably using a computerized system, in order to reduce the one-time impact of

completing the accomplishment report. It is recommended that compatible systems for tracking and recording accomplishments be instigated on each Forest in the System for similar reasons. Given the utility of these data for program management, it would be of direct benefit to each management unit to implement a simply method of accumulating these data.

Regions that already utilize computer programs in keeping track of project information should make adjustments in those programs to ensure that all required data elements are included. They should also see that these data are regularly reported by each of their Forests. The implementation of the Forest Level Information Processing System (FLIPS) should provide an ideal opportunity to quickly pass data from Forest to Region to Washington Office in future years.

REFERENCES

Comptroller General
1981 Are agencies doing enough or too much for archeological preservation? Guidance needed. U.S. General Accounting Office, Washington, D.C.

Koskella, T.W., David W. Scott, Floyd Sharrock, William E. Johnson, Bruce B. Hronek, Richard K. Griswold, and Zane G. Smith
1976 Cultural Resource Program Review. USDA Forest Service, Washington, D.C.

FSM 2360
1980 Chapter 2360 - Special Interest Areas. Forest Service Manual System. USDA Forest Service, Washington, D.C.

P.L. 93-291
1974 An Act to provide for the Preservation of Historical and Archeological Data. 98 Stat. 174. May 24, 1974. Washington, D.C.

APPENDIX A

Cultural Resource Management Accomplishment Form

Report FS-2300-M

USDA Forest Service

CULTURAL RESOURCES MANAGEMENT ACCOMPLISHMENT REPORT

(Reference FSM 2360, Report FS-2300-M)

PART I – DATA BY ACTIVITY TYPES

Elements (a)	T&M (b)	Timber (c)	Range (d)	Lands (e)	Mineral (f)	Recreation (g)	Wildlife (h)	Water (i)	Fire (j)	Engineering (k)	[illegible]	Total (m)	Non-FS (n)
1. Surveys (Number)													
2. Complete Survey (Acres)													
3. Cleared (Acres)													
4. Surveys with Cultural Resources (Acres)													
5. New Cultural Resources (Local 1													
6. Survey Costs													
7. Evaluations													
8. Cultural Resources Evaluated													
9. Cultural Resources Eligible													
10. Evaluation Costs													
11. Projects/EA's No Effect													
12. Cultural Resources No Effect													
13. Projects/EA's No Adverse Effect													
14. Cultural Resources No Adverse Effect													
15. Projects/EA's Adverse Effect													
16. Cultural Resources Adverse Effect													
17. Data Recovery Projects													
18. Cultural Resources with Data Recovered													
19. Data Recovery Costs													
20. Documentations													
21. Cultural Resources Documented													
22. Documentation Costs													
23. Cultural Resources Protected													
24. Protection Costs													
25. Enhancement Projects													
26. Cultural Resources Enhanced													
27. Enhancement Costs													
28. Cultural Resource Plans													
29. Planning Costs													
30. Cultural Resource Overviews													
31. Overview Acres													
32. Overview Costs													
33. Cultural Resource Overview Updates													
34. Update Acres													
35. Update Costs													
36. Cultural Resource Reports													

PART II – SUMMARY OF PART I

Elements (a)	Prior to FY ____ (b)	Current FY ____ (c)	Total (b + c) (d)
1. Acres Surveyed			
2. CRs *(Historic)*			
3. CRs *(Prehistoric)*			
4. CRs *(Total)*			
5. CRs Evaluated			
6. CRs Eligible			
7. CRs Nominated			
8. CRs Listed			
9. Districts Nominated			
10. Districts Listed			
11. National Historic Landmarks Nominated			
12. National Historic Landmarks Listed			
13. CRs Protected			
14. CRs Enhanced			
15. Overviews Completed			
16. Overviews Updated			

PART III – COST RANGES

Cost Range (a)	Surveys (b)	Evaluations (c)	Mitigations (d)
1. < $1M			
2. $1M-$5M			
3. $5M-$10M			
4. $10M-$25M			
5. $25M-$50M			
6. $50M-$100M			
7. > $100M			

*From total in column [illegible] enter [illegible] contract, permit, or other non-FS employees.

FS-2300-8 (12-83)
GPO 887 776

APPENDIX B

Cultural Resource Management Accomplishment Form

Regional Forms

CULTURAL RESOURCES MANAGEMENT ACCOMPLISHMENT REPORT

REGION ONE

ELEMENT	CRM	TIMBER	RANGE	LANDS	MINERALS	RCREATION	WILDLIFE	WATER	FIRE	ENGINEERI	S&PF	TOTAL	NON-FS
SURVEYS	92	248	100	86	216	13	1		1	29		786	4
ACRES	22728	172859	51715	10212	20829	3418	3		2	1172		282938	
CLEARED	116777	258268	52015	16768	20411	3483	3		2	1222		468954	
WITH CR'S	41	66	36	32	73	6	1			12		267	2
CR'S LOC	101	169	96	54	124	17			2	29		591	2
COSTS	45025	180700	7446	13403	47026	6677	225			6887		307390	
EVALUATIO	10	13	5		15		2			2	4	51	
CR'S EVAL	12	73	5	27	37	1			2	2		159	2
CR'S ELIG	5	5		2	29				2	1		44	
EVAL COST	3569	2269	450	881	8070				400	1220		16859	
NO EFFECT	159	154	28	50	119	2			1	16		529	
CR'S NE	173	38	39	55	113					17		435	
NO ADV	11	10	10	35	96				1			163	
CR'S NAD	4	10	39	60	109					17		239	
ADVERSE				18					1			19	
CR'S ADV												0	
DATA REC				2	2					3		7	
CR' DR				3	3					4		10	
DR COSTS				622	635					977		2234	
DOCUMENT	1	1	1	11	9	1						24	
CR S DOC	1	1	1	11	9	1						24	
DOC COSTS	400	400	225	2075	1750	1800						6650	

CR'S PROT	5
PROT COST	625
ENHANCE	6
CR'S ENH	3
ENH COSTS	1025
CR PLANS	8
PLAN COST	3400
CR OVERV	1.25
OVER ACRE	3100000
OVER COST	21000
UPDATES	
UPD ACRES	
UPD COSTS	
CR REPORT	230

SUMMARY

ELEMENT	PRIOR	CURRENT	TOTAL
ACRES	1500837	282938	1783775
HISTORIC	1744	284	2028
PREHIST	1380	324	1704
CR'S TOT	3333	591	3924
CR'S EVAL	233	159	392
CR'S ELIG	117	44	161
CR'S NOM	50	12	62
CR'S LIST	48	11	59
DIST NOM	1	1	2
DIST LIST	1	1	2
NHL NOM	4		4
NHL LIST	4		4
CR'S PROT	13	5	18
CR'S ENHA	12	3	15
OVERVIEWS	9	1.25	10.25
UPDATES	4	0	4

COST RANGES

RANGE	SURVEY	EVALUATE	MITIGATE
<$1M	55!	94	37
$1M-$5M	30	12	1
$5M-$10M			
$10M-$25M			
$25M-$50M			
$25M-100M			
>$100M			2

CULTURAL RESOURCES MANAGEMENT ACCOMPLISHMENT REPORT

REGION TWO

ELEMENT	CRM	TIMBER	RANGE	LANDS	MINERALS	RCREATION	WILDLIFE	WATER	FIRE	ENGINEERI	S&PF	TOTAL	NON-FS
SURVEYS	44	57	57	32	192	7	8	13		6		416	235
ACRES	3326	39669	1352	6556	24342	2950	1147	565		664		80571	35427
CLEARED	25723	66383	2743	7229	25477	2950	3224	565		664		134958	73428
WITH CR'S	10	30	7	21	51	4	2	3		2		130	67
CR'S LOC	63	283	13	120	383	29	9	7		4		911	599
COSTS	31258	66795	13872	19703	3179	555	4904	1658		1117		143041	55504
EVALUATIO	12	28	1	23	15	3				1		83	335
CR'S EVAL	58	213	8	108	382	26	15	5		6		821	600
CR'S ELIG	12	49		1200	129	5	5	4		2		1406	189
EVAL COST	943	1018			106							2067	106
NO EFFECT	16	49	7	26	171	7		10		7		293	198
CR'S NE	64	261	33	102	394	29	16	7		5		911	543
NO ADV		4	1	4	15							24	4
CR'S NAD		8	1	3	61							73	55
ADVERSE		1										1	
CR'S ADV		1										1	
DATA REC	1											1	
CR' DR	1											1	
DR COSTS	687											687	
DOCUMENT					4							4	4
CR'S DOC					55							55	55
DOC COSTS												0	
CR'S PROT	281												
PROT COST	5700												
ENHANCE	2												
CR'S ENH	4												
ENH COSTS	500												
CR PLANS	1												
PLAN COST	300												
CR OVERV	3												
OVER ACRE	2191075												
OVER COST	37413												
UPDATES													
UPD ACRES													
UPD COSTS													
CR REPORT	13												

SUMMARY

ELEMENT	PRIOR	CURRENT	TOTAL
ACRES	1328461	80571	1409032
HISTORIC	1622	229	1851
PREHIST	2778	467	3245
CR'S TOT	4400	911	5311
CR'S EVAL	2410	821	3231
CR'S ELIG	155	1406	1561
CR'S NOM	8	4	12
CR'S LIST	7		7
DIST NOM	2	1	3
DIST LIST	2		2
NHL NOM	3		3
NHL LIST	2		2
CR'S PROT	613	281	894
CR'S ENHA	4	4	8
OVERVIEWS	10	3	13
UPDATES		1	1

COST RANGES

RANGE	SURVEY	EVALUATE	MITIGATE
<$1M	172	47	
$1M-$5M	31	29	
$5M-$10M	5		
$10M-$25M	2		
$25M-$50M			
$25M-100M			
>$100M			

CULTURAL RESOURCES MANAGEMENT ACCOMPLISHMENT REPORT

REGION THREE

ELEMENT	CRM	TIMBER	RANGE	LANDS	MINERALS	RCREATION	WILDLIFE	WATER	FIRE	ENGINEERI	S&PF	TOTAL	NON-FS
SURVEYS	17	115	155	108	75	15	31	2	5	27		550	134
ACRES	183	39820	20247	5005	849	70	1368	100	1146	1921		70709	6793
CLEARED	50	119918	20759	4233	819	235	1361	110	4536	1411		153432	7928
WITH CR'S	12	62	38	25	16	1	6		10	7		177	49
CR'S LOC												0	
COSTS												0	
EVALUATIO		3	29	34						1		67	
CR'S EVAL												0	
CR'S ELIG		3	29	34						1		67	
EVAL COST												0	
NO EFFECT	2	94	151	86	73	14	31	2	5	24		482	134
CR'S NE	24	453	262	92	17	1	24		3	37		913	146
NO ADV				17						1		18	3
CR'S NAD		3	26	33						1		63	28
ADVERSE		1	1	1						1		4	
CR'S ADV			3	1								4	
DATA REC												0	
CR' DR												0	
DR COSTS												0	
DOCUMENT												0	
CR'S DOC												0	
DOC COSTS												0	

CR'S PROT	
PROT COST	
ENHANCE	40
CR'S ENH	286
ENH COSTS	
CR PLANS	1
PLAN COST	4000
CR OVERV	1
OVER ACRE	263489
OVER COST	45000
UPDATES	1
UPD ACRES	206598
UPD COSTS	800
CR REPORT	2

SUMMARY

ELEMENT	PRIOR	CURRENT	TOTAL
ACRES		70709	70709
HISTORIC			0
PREHIST			0
CR'S TOT		0	0
CR'S EVAL		0	0
CR'S ELIG		67	67
CR'S NOM		1	1
CR'S LIST	24	1	25
DIST NOM	2		2
DIST LIST			0
NHL NOM	3		3
NHL LIST	3		3
CR'S PROT		0	0
CR'S ENHA		286	286
OVERVIEWS	6	1	7
UPDATES		1	1

COST RANGES

RANGE	SURVEY	EVALUATE	MITIGATE
<$1M	550		
$1M-$5M			
$5M-$10M			
$10M-$25M			
$25M-$50M			
$25M-100M			
>$100M			

CULTURAL RESOURCES MANAGEMENT ACCOMPLISHMENT REPORT

REGION FOUR

ELEMENT	CRM	TIMBER	RANGE	LANDS	MINERALS	RCREATION	WILDLIFE	WATER	FIRE	ENGINEERI	S&PF	TOTAL	NON-FS
SURVEYS	44	137	150	23	117	23	9	14	2	32	6	557	47
ACRES	709	20080	12059	7135	5708	449	157	298	125	762	24	47505	3846
CLEARED	350	73226	13926	29308	6280	398	429	298	405	764	24	125408	4169
WITH CR'S	41	43	12	9	30	4	1	2		10	2	154	14
CR'S LOC	90	131	138	24	73	3	1	4		24	3	491	41
COSTS	27334	98447	44950	22046	40324	7189	8716	3010	730	8210	1650	262606	17863
EVALUATIO	2	11	8	3	14	2	1			7	1	49	9
CR'S EVAL	3	40	91	10	48	2	2			15	3	214	37
CR'S ELIG	4	21		2	16		2			1	1	47	11
EVAL COST	6210	7200	50	150	17981	100	400			2250	1000	35341	10000
NO EFFECT	28	127	147	19	102	15	9	12	2	25	6	492	28
CR'S NE	22	123	54	19	45	3	1			18	2	287	19
NO ADV	1	3	3		6			1		4		18	3
CR'S NAD	2	5	4		24			3		11		49	18
ADVERSE		1			2					3		6	
CR'S ADV		1			4					3		8	
DATA REC	3				3		1					7	2
CR' DR	4				3		1					8	2
DR COSTS	19928				6650	750	400					27728	17114
DOCUMENT	2									2	1	5	1
CR'S DOC	2									3	1	6	1
DOC COSTS	1827									200	3500	5527	3500
CR'S PROT	2												
PROT COST													
ENH PROJ	11												
ENHANCE	15												
ENH COSTS	13886												
CR PLANS	10												
PLAN COST	30191												
CR OVERV	4.5												
OVER ACRE	4354228												
OVER COST	22632												
UPDATES	2												
UPD ACRES	1801000												
UPD COSTS	4466												
CR REPORT	8												

SUMMARY

ELEMENT	PRIOR	CURRENT	TOTAL
ACRES	423190	47505	470695
HISTORIC	1647	192	1839
PREHIST	6971	299	7270
CR'S TOT	8579	491	9070
CR'S EVAL	2215	214	2429
CR'S ELIG	992	47	1039
CR'S NOM	19	0	19
CR'S LIST	26	0	26
DIST NOM	10	1	11
DIST LIST	8	0	8
NHL NOM	3	0	3
NHL LIST	1	0	1
CR'S PROT	41	2	43
CR'S ENHA	7	15	22
OVERVIEWS	13	4.5	17.5
UPDATES	0	2	2

COST RANGES

RANGE	SURVEYS	EVALUATE	MITIGATE
<$1M	510	33	4
$1M-$5M	44	8	3
$5M-$10M	3	1	
$10M-$25M			4
$25M-$50M			
$50M-100M			
<$100M			

CULTURAL RESOURCES MANAGEMENT ACCOMPLISHMENT REPORT

REGION FIVE

ELEMENT	CRM	TIMBER	RANGE	LANDS	MINERALS	RCREATION	WILDLIFE	WATER	FIRE	ENGINEERI	S&PF	TOTAL	NON-FS
SURVEYS	17	424	36	81	54	51	38	13	34	28	1	818	41
ACRES	1270	333500	1590	6740	2630	4310	4080	340	5590	470	20	369710	9170
CLEARED	1170	347410	1490	7280	2710	3660	3310	452	9630	360	10	385822	8340
WITH CR'S	12	257	13	27	25	19	13	2	15	6		416	27
CR'S LOC	72	1739	31	67	36	52	30	6	53	22		2283	175
COSTS	22880	866650	22030	42550	25170	25040	22300	12320	32550	13680	70	1145840	60600
EVALUATIO	14	66	3	9	10	9	3	1	4	7		135	9
CR'S EVAL	16	515	1	22	17	55	3	5	18	6		669	11
CR'S ELIG	9	312	1	5	7	43		1	13	3		396	2
EVAL COST	19600	161150	830	8010	3960	17520	880	2300	4050	11500		382100	132300
NO EFFECT	1	363	32	49	42	35	28	13	24	25		625	13
CR'S NE	20	1039	42	33	12	32	30	14	17	19		1283	25
NO ADV		8	3	9	17	11	2	3	4	3		64	4
CR'S NAD		115	7	21	25	25	17	5	17	5		291	54
ADVERSE	2			3		1						8	2
CR'S ADV	2			3		5						12	2
DATA REC	3	4		2	1	4				1		19	4
CR' DR	6			3		8				10		35	8
DR COSTS	11220	20000		29000	1000	94630				153000		474850	166000
DOCUMENT	3	1			4							8	
CR'S DOC	1	1			4							6	
DOC COSTS	750	418			2230							3398	
CR'S PROT	602												
PROT COST	27920												
ENHANCE	16												
CR'S ENH	7												
ENH COSTS	9600												
CR PLANS	22												
PLAN COST	56950												
CR OVERV	9												
OVER ACRE	6636000												
OVER COST	88690												
UPDATES	4												
UPD ACRES	1086000												
UPD COSTS	3000												
CR REPORT	39												

SUMMARY

ELEMENT	PRIOR	CURRENT	TOTAL
ACRES	2365570	369710	2735280
HISTORIC	4624	668	5292
PREHIST	14503	1639	16142
CR'S TOT	18856	2283	21139
CR'S EVAL	4400	669	5069
CR'S ELIS	2552	396	2948
CR'S NOM	35	9	44
CR'S LIST	28		28
DIST NOM	4	1	5
DIST LIST	4	1	5
NHL NOM			0
NHL LIST			0
CR'S PROT	2478	602	3080
CR'S ENHA	313	7	320
OVERVIEWS	28	9	37
UPDATES	2	4	6

COST RANGES

RANGE	SURVEY	EVALUATE	MITIGATE
<$1M	561	141	7
$1M-$5M	101	22	7
$5M-$10M	29	9	3
$10M-$25M	9	1	2
$25M-$50M	1	3	1
$25M-100M	1	1	1
>$100M			2

CULTURAL RESOURCES MANAGEMENT ACCOMPLISHMENT REPORT

REGION SIX

ELEMENT	CRM	TIMBER	RANGE	LANDS	MINERALS	RCREATION	WILDLIFE	WATER	FIRE	ENGINEERI	S&PF	TOTAL	NON-FS
SURVEYS		1097	80	39	35	55	10	6	4	42	6	1374	4
ACRES		866786	6213	29586	2660	5480	447	183	549	11521	1109	924534	3928
CLEARED		866171	6213	29626	2060	5859	447	183	549	11479	1109	923696	3928
WITH CR'S		417	24	10	11	26		1	2	8	2	501	
CR'S LOC		2020	69	22	8	22				10	7	2158	
COSTS		791784	6608	27123	3843	12429	1790	585	2516	12620	2495	861793	5200
EVALUATIO		66	3	10	3	27				12		121	3
CR'S EVAL		342	12	13	4	150				12		533	12
CR'S ELIG		326	2	4	2	49				8		391	4
EVAL COST		54271	4912	7750	165	17495				12050		96643	3900
NO EFFECT		1082	42	32	35	36	8	5	1	26		1267	2
CR'S NE		1782	76	21	14	12		1	2	10		1918	
NO ADV		15		1		3				3		22	
CR'S NAD		31		1		4				4		40	
ADVERSE				1		1						2	
CR'S ADV				1		1						2	
DATA REC		2				4						6	3
CR' DR		2				4						6	3
DR COSTS		8731	2000			4000						14731	2500
DOCUMENT		12	1			5			2			20	
CR'S DOC		26	1			5			2			34	
DOC COSTS		5700				2000			1250			8950	

CR'S PROT	926
PROT COST	23700
ENHANCE	24
CR'S ENH	24
ENH COSTS	50050
CR PLANS	11
PLAN COST	26869
CR OVERV	6
OVER ACRE	699520
OVER COST	6200
UPDATES	10
UPD ACRES	1620523
UPD COSTS	5829
CR REPORT	9

SUMMARY

ELEMENT	PRIOR	CURRENT	TOTAL
ACRES	3331866	924534	4256400
HISTORIC	5344	970	6314
PREHIST	4741	1188	5929
CR'S TOT	10085	2158	12243
CR'S EVAL	1107	533	1640
CR'S ELIG	1249	391	1640
CR'S NOM	13	4	17
CR'S LIST	25		25
DIST NOM	7		7
DIST LIST	6		6
NHL NOM	1		1
NHL LIST	1		1
CR'S PROT	2313	926	3239
CR'S ENHA	33	24	57
OVERVIEWS	33	6	39
UPDATES	6	10	16

COST RANGES

RANGE	SURVEY	EVALUATE	MITIGATE
<$1M	1281	99	23
$1M-$5M	88	23	3
$5M-$10M	3		
$10M-$25M	2		
$25M-$50M			
$25M-100M			
>$100M			

CULTURAL RESOURCES MANAGEMENT ACCOMPLISHMENT REPORT

REGION EIGHT

ELEMENT	CRM	TIMBER	RANGE	LANDS	MINERALS	RCREATION	WILDLIFE	WATER	FIRE	ENGINEERI	S&PF	TOTAL	NON-FS
SURVEYS	55	280	4	100	56	19	17	5	4	120		660	47
ACRES	30885	63185	269	23845	8048	9683	4526	718	1166	3173		145498	11542
CLEARED	41932	69818	269	22760	8238	25017	4526	718	1166	3173		177617	11708
WITH CR'S	13	106	2	31	6	5	2	3	2	9		179	7
CR'S LOC	243	470	2	177	117	82	9	6	7	60		1173	126
COSTS	129564	133943	1088	98266	28001	21539	6101	2627	1811	13968		436908	44118
EVALUATIO	25	27		13		3	1			3		72	2
CR'S EVAL	53	158		90		8	1			12		322	49
CR'S ELIG	10	3		7		1						21	1
EVAL COST	5260	9285		4390		388	200			1730		21253	
NO EFFECT	8	139	2	43	5	8	5	3	3	31		247	10
CR'S NE	83	108	1	39		1	2	4	5	12		255	48
NO ADV		22		5	28	3		2		23		83	2
CR'S NAD		36		3		1		1		2		43	4
ADVERSE		10		1	2							13	
CR'S ADV		18		2	113							133	
DATA REC	1	3		2					1			7	
CR' DR	1	3		7					1			12	
DR COSTS	900	1930		2400					100			5330	
DOCUMENT	4					1						5	
CR'S DOC	4					1						5	
DOC COSTS	1101					250						1351	

CR'S PROT	24
PROT COST	3100
ENHANCE	14
CR'S ENH	14
ENH COSTS	3400
CR PLANS	4
PLAN COST	2300
CR OVERV	12
OVER ACRE	7012095
OVER COST	70692
UPDATES	
UPD ACRES	
UPD COSTS	
CR REPORT	284

SUMMARY

ELEMENT	PRIOR	CURRENT	TOTAL
ACRES	494521	145498	640019
HISTORIC	894	361	1255
PREHIST	2807	716	3523
CR'S TOT	4245	1173	5418
CR'S EVAL	464	322	786
CR'S ELIG	68	21	89
CR'S NOM	33	6	39
CR'S LIST	26		26
DIST NOM	3		3
DIST LIST	2		2
NHL NOM	1		1
NHL LIST	1		1
CR'S PROT	50	24	74
CR'S ENHA	16	14	30
OVERVIEWS	3	6	9
UPDATES	2	0	2

COST RANGES

RANGE	SURVEY	EVALUATI	MITIGATE
<$1M	267	40	5
$1M-$5M	79	4	6
$5M-$10M	2		
$10M-$25M	46		
$25M-$50M	46		
$50M-100M	44		
$<100M			

CULTURAL RESOURCES MANAGEMENT ACCOMPLISHMENT REPORT

REGION NINE

ELEMENT	CRM	TIMBER	RANGE	LANDS	MINERALS	RCREATION	WILDLIFE	WATER	FIRE	ENGINEERI	S&PF	TOTAL	NON-FS
SURVEYS	14	626	9	40	143	35	41			25		933	12
ACRES	21244	266614	356	27096	5420	2759	3987			180		327656	100414
CLEARED	21244	269716	356	27096	5420	2759	3987			180		330758	100414
WITH CR'S	14	277	4	9	20	14	4			2		344	4
CR'S LOC	1689	519	12	174	54	63	4			2		2517	600
COSTS	134626	683591	5454	132293	33198	16722	10277			3680		1019841	292746
EVALUATIO	43	2		16		10						71	6
CR'S EVAL	46	4		95		18						163	15
CR'S ELIG	3			7		1						11	7
EVAL COST	32042	1540		42697		36148						112427	33111
NO EFFECT		626	9	32	143	35	41			25		911	
CR'S NE		519	12	4	54	63	4			2		658	
NO ADV				1								1	
CR'S NAD				2								2	
ADVERSE												0	
CR'S ADV												0	
DATA REC												0	
CR' DR												0	
DR COSTS												0	
DOCUMENT						2						2	1
CR'S DOC						1						1	1
DOC COSTS						7030						7050	5262

CR'S PROT	10
PROT COST	34025
ENHANCE	6
CR'S ENH	
ENH COSTS	8503
CR PLANS	
PLAN COST	
CR OVERV	
OVER ACRE	
OVER COST	
UPDATES	
UPD ACRES	
UPD COSTS	
CR REPORT	357

SUMMARY

ELEMENT	PRIOR	CURRENT	TOTAL
ACRES	762692	327656	1090348
HISTORIC	6898	2138	9036
PREHIST	3649	379	4028
CR'S TOT	10547	2517	13064
CR'S EVAL	157	163	320
CR'S ELIG	51	11	62
CR'S NOM	22	1	23
CR'S LIST	21	1	22
DIST NOM	1		1
DIST LIST	1		1
NHL NOM			0
NHL LIST			0
CR'S PROT	15	10	25
CR'S ENHA	11	0	11
OVERVIEWS	16	0	16
UPDATES		0	0

COST RANGES

RANGE	SURVEY	EVALUATE	MITIGATE
<$1M	895	51	
$1M-$5M	33	11	
$5M-$10M	1	9	
$10M-$25M	1		
$25M-$50M	2		
$25M-100M	1		
>$100M			

CULTURAL RESOURCES MANAGEMENT ACCOMPLISHMENT REPORT

REGION TEN

ELEMENT	CRM	TIMBER	RANGE	LANDS	MINERALS	RCREATION	WILDLIFE	WATER	FIRE	ENGINEERI	S&PF	TOTAL	NON-FS
SURVEYS	8	16		69	27	6	12			5		143	53
ACRES	161	3586		1483	137	264	1201			177		7009	1156
CLEARED	60	95702		1927	151	13	5794			401		104048	1961
WITH CR'S	7	6		40	21	1	5			5		85	37
CR'S LOC	7	6		61	14	1	7			5		101	57
COSTS	2886	28658		195358	4954	8040	9823			2975		252895	190287
EVALUATIO	1	8		38	3	2	3					55	33
CR'S EVAL	2	4		32	3	1	3					45	36
CR'S ELIG	2			31	2	1	2					38	29
EVAL COST	2718	300		1302	1400	700	6670					13090	360
NO EFFECT		11		31	8		9			1		60	17
CR'S NE		41		8	10		6			1		66	5
NO ADV		1		1	1	2						5	
CR'S NAD		1		1	2	2	1					7	
ADVERSE												0	
CR's ADV												0	
DATA REC				4	2	2	2					10	4
CR' DR					2	1	3					6	
DR COSTS					10000	4000	6000					20000	
DOCUMENT	1	2		9						5		17	9
CR'S DOC	2	2								5		9	
DOC COSTS	150	750					150			1500		2550	

CR'S PROT	4
PROT COST	886
ENHANCE	4
CR'S ENH	4
ENH COSTS	2363
CR PLANS	
PLAN COST	
CR OVERV	22
OVER ACRE	309327
OVER COST	9000
UPDATES	
UPD ACRES	
UPD COSTS	
CR REPOR	39

SUMMARY

ELEMENT	PRIOR	CURRENT	TOTAL
ACRES		7009	7009
HISTORIC		84	84
PREHIST		40	40
CR'S TOT	23	101	124
CR'S EVAL		45	45
CR'S ELIG		38	38
CR'S NOM			0
CR'S LIST			0
DIST NOM			0
DIST LIST			0
NHL NOM			0
NHL LIST			0
CR'S PROT		4	4
CR'S ENHA		4	4
OVERVIEWS		22	22
UPDATES		0	0

COST RANGES

RANGE	SURVEY	EVALUATE	MITIGATE
<$1M	75	53	18
$1M-$5M	64	2	1
$5M-$10M	1		
$10M-$25M	2		
$25M-$50M			
$25M-100M			
>$100M			

APPENDIX C

Cultural Resource Management Accomplishment Report

National Summaries of Reported Data

CULTURAL RESOURCE MANAGEMENT ACCOMPLISHMENT REPORT

NFS SUMMARY

ELEMENT	CRM	TIMBER	RANGE	LANDS	MINERALS	RCREATION	WILDLIFE	WATER	FIRE	ENGINEERI	S&PF	TOTAL	NON-FS
SURVEYS	291	3000	591	578	915	224	171	53	50	314	13	6200	577
ACRES	80506	1806099	93800	117658	70623	29383	16916	2204	8578	20040	1153	2246960	172276
CLEARED	207306	2166652	97771	146227	71566	44379	23081	2326	16288	19654	1143	2796393	211876
WITH CR'S	150	1264	136	204	253	80	34	11	29	61	4	2226	207
CR'S LOC	2264	5337	361	699	809	269	60	23	62	136	10	10050	1600
COSTS	393574	2850568	101448	550942	185695	98191	64137	20200	37607	63137	4215	4369714	666318
EVALUATIO	107	224	49	146	60	56	10	1	4	33	5	695	388
CR'S EVAL	190	1349	117	397	491	261	24	6	24	53	3	2915	762
CR'S ELIG	45	719	32	1292	185	100	9	5	15	16	1	2419	243
EVAL COST	70342	237033	6242	65180	31682	72351	8150	2300	4450	28750	1000	527480	199777
NO EFFECT	214	2645	418	368	698	152	131	21	36	180	6	4869	402
CR'S NE	386	4364	519	373	659	141	53	26	24	140	2	6687	786
NO ADV	12	63	17	73	166	19	2	5	21	33		411	16
CR'S NAD	6	209	77	124	219	32	18	9	17	40		751	159
ADVERSE	2	13	1	24	4	2			1	4		51	2
CR'S ADV	2	20	3	7	117	6				3		158	2
DATA REC	8	9		10	8	10	3		1	4		53	13
CR' DR	12	5		13	8	13	4		1	14		70	13
DR COSTS	32735	30661	2000	32022	18289	103380	6400		100	153977		379564	185614
DOCUMENT	11	16	2	20	17	9			2	7	1	85	11
CR'S DOC	10	30	2	11	68	8			2	8	1	140	57
DOC COSTS	4228	7268	225	2075	3980	11100	150		1250	1700	3500	35476	8762

CR'S PROT	1854
PROT COST	95956
ENHANCE	123
CR'S ENH	357
ENH COSTS	89327
CR PLANS	57
PLAN COST	124010
CR OVERV	58.75
OVER ACRE	24565734
OVER COST	300627
UPDATES	17
UPD ACRES	4714121
UPD COSTS	14095
CR REPORT	1181

SUMMARY

ELEMENT	PRIOR	CURRENT	TOTAL
ACRES	10207137	2246960	12454097
HISTORIC	22773	4926	27699
PREHIST	36829	5052	41881
CR'S TOT	60068	10050	70118
CR'S EVAL	10986	2915	13901
CR'S ELIG	5184	2419	7603
CR'S NOM	180	37	217
CR'S LIST	205	13	218
DIST NOM	30	4	34
DIST LIST	24	2	26
NHL NOM	15		15
NHL LIST	12		12
CR'S PROT	5523	1854	7377
CR'S ENHA	396	357	753
OVERVIEWS	118	58.75	176.75
UPDATES	14	17	31

COST RANGES

RANGE	SURVEY	EVALUATE	MITIGATE
<$1M	4862	558	94
$1M-$5M	470	111	21
$5M-$10M	39	19	3
$10M-$25M	65	1	6
$25M-$50M	51	3	1
$25M-100M	46	1	1
>$100M			4
SUM	5533	693	130

CULTURAL RESOURCE MANAGEMENT ACCOMPLISHMENT REPORT

NFS SUMMARY (less R-3)

ELEMENT	CRM	TIMBER	RANGE	LANDS	MINERALS	RCREATION	WILDLIFE	WATER	FIRE	ENGINEERI	S&PF	TOTAL	NON-FS
SURVEYS	274	2885	436	470	840	209	140	51	45	287	13	5650	443
ACRES	80323	1766279	73553	112653	69774	29313	15548	2104	7432	18119	1153	2176251	165483
CLEARED	207256	2046734	77012	141994	70747	44144	21720	2216	11752	18243	1143	2642961	203948
WITH CR'S	138	1202	98	179	237	79	28	11	19	54	4	2049	158
CR'S LOC	2264	5337	361	699	809	269	60	23	62	156	10	10050	1600
COSTS	393574	2850568	101448	550942	185695	98191	64137	20200	37607	63137	4215	4369714	666318
EVALUATIO	107	221	20	112	60	56	10	1	4	32	5	628	388
CR'S EVAL	190	1349	117	397	491	261	24	6	24	53	3	2915	762
CR'S ELIG	45	716	3	1258	185	100	9	5	15	15	1	2352	243
EVAL COST	70342	237033	6242	65180	31682	72351	8150	2300	4450	28750	1000	527480	199777
NO EFFECT	212	2551	267	282	625	138	100	19	31	156	6	4387	268
CR'S NE	362	3911	257	281	642	140	29	26	21	103	2	5774	640
NO ADV	12	63	17	56	166	19	2	5	21	32		393	13
CR'S NAD	6	206	51	91	219	32	18	9	17	39		688	131
ADVERSE	2	12		23	4	2			1	3		47	2
CR'S ADV	2	20		6	117	6				3		154	2
DATA REC	8	9		10	8	10	3		1	4		53	13
CR' DR	12	5		13	8	13	4		1	14		70	13
DR COSTS	32735	30661	2000	32022	18289	103380	6400		100	153977		379564	185614
DOCUMENT	11	16	2	20	17	9			2	7	1	85	11
CR'S DOC	10	30	2	11	68	8			2	8	1	140	57
DOC COSTS	4228	7268	225	2075	3980	11100	150		1250	1700	3500	35476	8762

CR'S PROT	1854
PROT COST	95956
ENHANCE	83
CR'S ENH	71
ENH COSTS	89327
CR PLANS	57
PLAN COST	124010
CR OVERV	58.75
OVER ACRE	24565734
OVER COST	300627
UPDATES	17
UPD ACRES	4714121
UPD COSTS	14095
CR REPORT	1181

SUMMARY

ELEMENT	PRIOR	CURRENT	TOTAL
ACRES	10207137	2176251	12383388
HISTORIC	22773	4926	27699
PREHIST	36829	5052	41881
CR'S TOT	60068	10050	70118
CR'S EVAL	10986	2915	13901
CR'S ELIG	5184	2352	7536
CR'S NOM	180	37	217
CR'S LIST	205	13	218
DIST NOM	30	4	34
DIST LIST	24	2	26
NHL NOM	15		15
NHL LIST	12		12
CR'S PROT	5523	1854	7377
CR'S ENHA	396	71	467
OVERVIEWS	118	58.75	176.75
UPDATES	14	17	31

COST RANGES

RANGE	SURVEY	EVALUATE	MITIGATE
<$1M	4862	558	94
$1M-$5M	470	111	21
$5M-$10M	39	19	3
$10M-$25M	65	1	6
$25M-$50M	51	3	1
$25M-100M	46	1	1
>$100M			4
SUM	5533	693	130